

BYZANTINE SARCOPHAGUS

Sebah & Joailler, Photographers, Constantinople.

MARBLES: THEIR ANCIENT AND MODERN APPLICATION.

By Sir LAWRENCE ALMA-TADEMA, O.M., R.A. [H.F.], and W.M. BRINDLEY, F.G.S., F.R.M.S.

I. MARBLES: THEIR ANCIENT APPLICATION. By Sir L. ALMA-TADEMA.

AT the request of the President and Council, I venture to read to you to-night some gleanings from the little I know about marble and its use in antiquity.

Antiquity in this case means, I suppose, the time before the dark days, when the Roman civilisation had come to an end of its supreme reign in the then known world. But its reign has never really ended, for the influence of the Roman civilisation lives still, and we are benefited by it more than we are aware of, and the dream of the great rulers has ever since been the reconstruction of the Roman Empire.

As for architecture, it is needless to say that it owes much to Roman art, especially through the Renaissance, when the love of marble reappeared; for this beautiful material was sadly neglected in the Middle Ages, to such an extent that even the places where it was quarried had been forgotten, and pioneers like our Mr. Brindley had to hunt for them, and by sheer enthusiasm and persistent research, succeeded in rediscovering several of the old quarries from which these glorious columns and slabs were extracted, which will ever command our admiration.

True, Roman art owes much to the Greeks, who in their turn owe much to the Egyptian, and the Mesopotamian, and the Syrian civilisations, but what interests us most just now is that the Romans used marble more than any other people before them.

In Egypt, granite, porphyry, and onyx (or rather Oriental alabaster) were only used as building materials, never to my recollection to beautify a building decoratively.

In Nineveh we find sculptured slabs of marble utilised as a dado, but the principal materials used for decorating a building seem to have been tiling and metal. Tiles were also



HOUSE OF SALLUSTIUS, POMPEII.



HOUSE OF SALLUSTIUS, POMPEII.

used in Egypt, the sepulchral chamber of one of the oldest pyramids being decorated in that material.

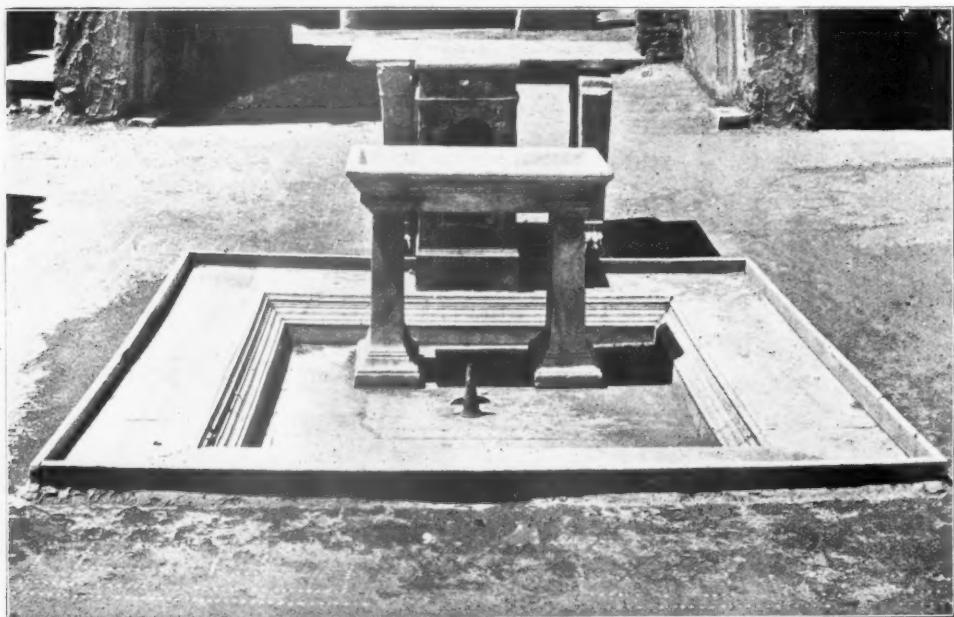
Where marble was first used for decoration (setting aside the sculptured slabs at Nineveh) I have been unable to discover; though this use of it must go back to great antiquity, to judge from what Pompeii teaches us. There indeed we find in the oldest wall painting many painted imitations of marble slabs and dados, as shown in the photographs [pp. 170, 171] of a room in the house of Sallustius.

The houses where these paintings are found undoubtedly date from the Republic, for in them, as in the house of the Mosaic of the Battle of Issus, we find purple much used. This colour never appears in the later Pompeian decoration, as during the Empire it was used by the Imperial family only.

Amongst the things which astonished me most at Pompeii was that in a town where marble was little used, very precious marbles were put to common use. For instance, I found in quite ordinary houses, bronze door-sockets let into rough blocks of Oriental alabaster, evidently remnants of some marble mason's workshop.

The only marble columns I recollect in Pompeii, are some unfinished ones in the new bath which was being built when the town was buried, and some in the Temple of Venus, also in course of erection.

I remember only two marble dados in rooms, one in a small house behind the Forum, opposite the house of Eumachia, made of that cold grey marble still so much used in Naples, set off with beadings of rosso antico (to my regret I have lost the drawing of it), and another in a small room, this time in the house of Sallustius, made of different sorts of marble, as you can see in my drawing [reproduced p. 173].



AN IMPLOVIRUM, POMPEII.

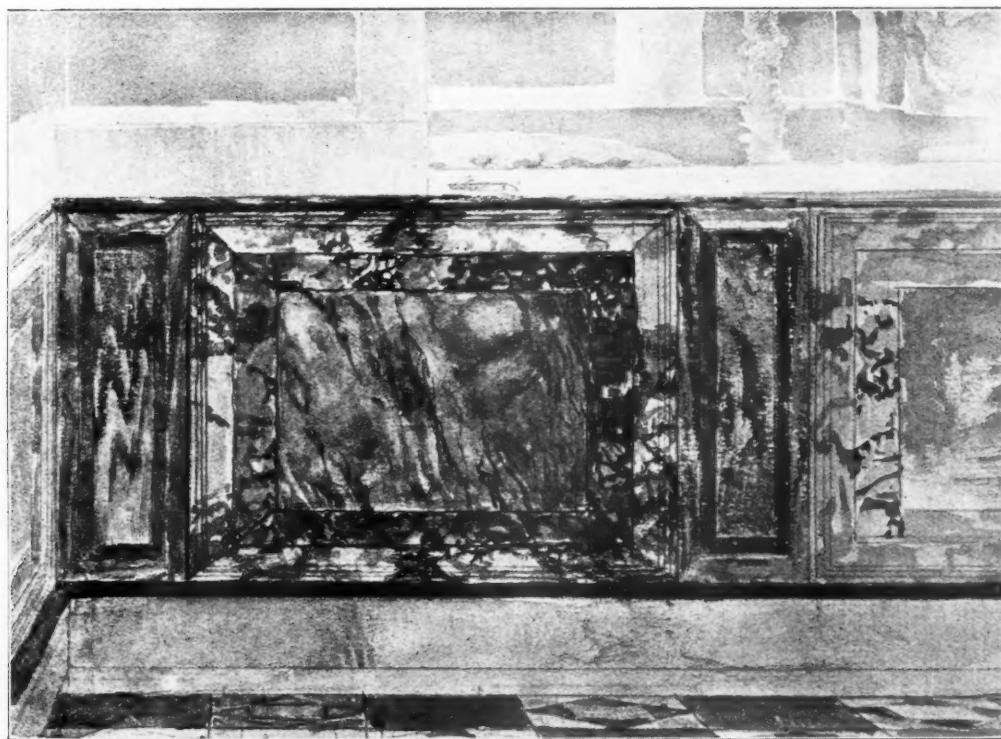
Then we find marble used on shop counters [see illustrations pp. 175, 176]; but there are very few so carefully treated; more often it is only pieces of slabs of different colours imbedded anyhow in the cement, the top being always a slab of marble.

I remember only one marble public fountain in the streets of Pompeii, the one behind the oldest bath; but the sculptured heads for the inlet of the water are more often in that material.

The floors are mostly of marble, either slabs or mosaic, and many impluviums in the richer houses are covered with white marble, as are some of the altars and pedestals; but one of the finest bits of marble in Pompeii is the door frame of the house of Eunachia, now in the Naples Museum.

As for sculpture, of course there is plenty of it in marble. When a Roman will was made sculpture was considered an item of value, as was house property and cattle. Strange to say, pictures do not seem to have been considered in that light, although they sometimes commanded high prices. Julius Cæsar bought for his public gardens in the Transtevere the *Medea*, and another picture by Timomachos of Byzantium, a contemporary artist not an old master, and paid £16,000 for the two.

In Pompeii marble was also largely used for the funeral monuments outside the town, but always as a veneer over brick or concrete, which proves that it was a costly material.



DADO IN HOUSE OF SALLUSTIUS, POMPEII.
From a water-colour drawing by Sir L. Alma-Tadema.

By utilising marble in that way the Romans obtained very great dexterity in applying thin slabs, and saved the material itself greatly. This way of utilising marble had a great influence upon the form of the mouldings, as in most instances, the slabs being applied to the bed of cement in such inclination as the body of the moulding required, the moulding became subservient to the thickness of the slab.

In Rome itself the use of marble was much more prolific. Already during the Republic it was used most luxuriously, for we learn that when Julius Cæsar reached Rome after crossing the Rubicon he found the Treasury empty, and one of his successful ways of replenishing it, was to levy a tax on marble columns.

Mazois, who studied the ruins of Pompeii so thoroughly, and whose publication on that wonderful revelation of Roman civilisation is still a standard work on the subject, has written a book, *The Palace of Scaurus*, from which you must allow me to extract a few remarks to illustrate the luxury of marble in Rome at the end of the Republic.

Scaurus was a partisan of Sylla and had amassed a colossal fortune. His house, built at the foot of the Palatine, contained an atrium of which, according to Pliny, the roof was supported by columns of Lucullan marble, a black marble found in the island of Chio. These columns were thirty-eight feet high; no house in Rome possessed columns so high. About these columns Mazois tells us, when transporting them to the house, the architect passing through the Forum with them, a philosopher, a client of Scaurus, remarked loudly to the amusement of the bystanders, "Until when will the laws be silent and allow such precious marbles to be utilised in a private house, in the face of the clay gods that decorate the pediments of our temples?" the architect answering, "When you will cease eating the dormouse and the glands of pork at Scaurus's, notwithstanding the censorial laws forbidding it," brought the laughers to his side.

Of the reign of Augustus it was said that he had found a Rome of brick and had left a Rome of marble. Building was rife, and architecture went apace, and the influx of marble was accordingly very great. The principal buildings and monuments erected during that period were in the Campus Martius. The Marmorata, the landing-stage for the marble discovered to the south of Rome, could not answer the purpose, and so they built a landing-stage for marble near the Campus Martius, which was discovered when rectifying the course of the river some twenty years ago. According to Lanciani:—One hundred and sixty metres above the bridge of St. Angelo a landing-stage was discovered built of blocks of tufa put crossways, without the help of cement, and coated with an outside facing of Travertine, fourteen metres wide and five high, protruding into the river for a distance of twenty-six metres, at an angle of forty degrees to the main line of the direction of the stream. On each side of it was a spacious landing almost level with the water's edge, built of concrete and faced with a palisade of square beams of *Quercus Robur*, from six to eight metres long, fifty-five by fifty centimetres thick, and ending in a point with a protecting four-pronged cap of iron, the beams being dovetailed together. Sheets of lead four millimetres thick were nailed against the inner face of the palisade to make it watertight, a line of piles protecting it from the vessels.

The wealthy patricians and personal friends of Augustus, Cornelius Balbus, Marcus Philippus, Statilius Taurus, Vipsanius Agrippa, moved by his enterprise, covered the Campus Martius with colossal constructions during the twenty-two years from A.U. 721, which is the date of Agrippa's ædileship, to 743, which is the date of the erection of the Horologium, or sun-dial, one of the last works of Augustus. These five men raised nine porticoes, three theatres, one amphitheatre, fifteen temples, five public parks, thermæ, aqueducts, fountains, altars, mausolea, fora, a complete system of drainage, and a bridge across the Tiber.

When the Church of St. Apollinaris was modernised and disfigured in 1737-40, ruins and



SHOP COUNTER, POMPEII.

From a water-colour drawing by Miss Alma-Tadema.

inscriptions were discovered proving that there stood in olden times the *Statio Rationis Marmorum*, the central office for the administration of marble quarries, which were the private property of the Crown. Around this office, and on each side of the avenue connecting it with the above-mentioned landing-place, stone cutters and sculptors settled in large



SHOP COUNTERS, POMPEII.

numbers. When digging in those quarters one is sure to meet with remains of their workshops, the yellow crystalline sand to cut the marbles, and their tools and unfinished sculpture.

To judge from the unfinished statues of Dacian prisoners, of which several were found there, the sculptor's activity in this quarter must have ceased after Trajan, and perhaps it was then that the *Marmorata* to the south of the town was built, as the greater columns of the later period and the obelisks and other big pieces of marble could only be brought through the

bridges and bends of the river with great difficulty, if at all. In any case it was used much later, for the specimens of marbles found in that emporium are of later date.

It is said that porphyry and verde antico were only introduced under Heliogabalus. Granite columns appear already in the ruins of the Basilica Ulpia, where giallo antico was well represented in the steps leading up to it.

The Temple of Venus in the Forum of Julius Cæsar was in white marble, and so was the Temple of Venus and Rome built by Hadrian. They must have been rather blinding with



STEP INTO TABLINUM, POMPEII.

their gilt bronze roof tiling against the dark blue sky, and I can well sympathise with the later Romans wishing for more colour. The Greek and Etruscan temples were painted all over, and they were beautiful, I believe, for the alkaline colours were not yet invented. The builders of the Parthenon rejected all blocks of marble not purely white, for they intended to colour it all. The columns having their shafts, say yellow, that yellow had to be as pure and unstained as possible. The colour was, I believe, sunk into the surface, for an engraved line separated the different colours to prevent their running into one another, as can still be seen on some remnants of the moulding over the Panathenaic Frieze.

If now we compare their colouring with the coloured marble, we must admit that a column of giallo antico has greater charm than a column stained yellow without any play of colour; but then the exquisite research of refined form in Greek architecture could not allow the play of colour which in Roman architecture so often hides slovenliness of form, as does the play in coloured marble when used for mouldings.



A HOUSE ALTAR, POMPEII.



ALTAR, POMPEII.

Marble found its highest development, perhaps, in Byzantine architecture, when painting was replaced by mosaic, and when colour reigned supreme; then the outside of the buildings had become severe and simple, and the richness of days gone by found its place in the interior.

In the best times of Roman architecture, those overwrought Corinthian capitals and cornices, with undercutting and overcarving, look more like lacework than architecture, and make us wonder. They are a marvel of workmanship, and must have come to value in the Italian sunshine; the white marble being transparent, the shadows became warmed by light as well as by reflection. Not so in London. Look at our Marble Arch!

Marble is beautiful stuff to deal with, and I am almost loath to praise it before English architects, and perhaps tempt them to try it in London, where the overcharged atmosphere forbids our making use of it for exteriors.

When used for interior work I know nothing finer, nothing more precious, nothing more wonderful, than a well-adjusted and well-disposed marble decoration. It is so clean and bright, so solid, and never harsh or unpleasant, provided it be applied by a man of taste.



SERGIUS, CONSTANTINOPLE.



FINISHED COLUMNS LYING *in situ* AT CARYSTUS ON EDGE OF PRECIPICE 2,000 FEET HIGH.

II. THE MODERN ASPECT OF MARBLE-WORK IN ARCHITECTURE.

By Wm. BRINDLEY, F.G.S., F.R.M.S.

TWENTY years ago I had the privilege and pleasure of reading before you in this room my first Paper on Marble; since then I have read here two others, in addition to various contributions to your JOURNAL. This makes it somewhat difficult to avoid repeating something I may have said before; so I ask your indulgence should I accidentally do so.

The name "Marble" carries with it a fascination that few other words do; it holds the same position among stones that gold does amongst metals. The fractured appearance of a piece of white crystalline marble conveys an impression of value not possessed by any opaque stone, and its usefulness began with the earliest civilisation.

The archaic sculptures in the museum on the Acropolis of Athens, executed out of the finest Paros and delicately tinted, have a life-like effect. It is therefore no wonder that marble was adopted as the most useful material for the representations of the deities; and the same world-wide affection for it still continues, and as civilisation and wealth increase, so does the demand, as it is certainly now more extensively used than ever before.

All the old quarries of the Greeks and Romans, with only one exception, are now found and are being reworked. New marble rocks have been discovered and opened out in various parts of the world.

Quarrying is now carried on by improved methods, the chief one being by wire, sawing the blocks off the solid rock instead of the ruinous one of blasting.

Manufactories of various sorts, with improved mechanical appliances for working marble, have increased. More workers of all kinds are being employed, and new uses for marble are constantly springing up. Further, I venture to think that our methods of using it have improved. This no doubt accounts for much of the general progress. But with all this advance, so far as this country is concerned, there is another side to look at, and that seriously, which is, that the bulk of the money spent here in this luxury goes to foreign manufacturers and workmen. After these introductory remarks a more detailed description may be acceptable.

To commence with Carrara, the quarry output of this district has enormously increased

of late years, and worked material at a still greater rate. The whole of the marble-bearing rocks of the Apuan Alps, of which Carrara is the chief centre, have now been attacked, not only on the southern slopes, which grade to the railway and the sea, but also on the northern sides of the mountains, where there is no outlet for the produce except by long-distance circuitous routes either to the west by "Aulla" and railway to Spezia for shipment, or east by the Baths of Lucca, thence by railway to Leghorn. (This route through the valley from Lucca to Aulla is one of the grandest in North Italy and little known. There are villages with good churches. The watershed of the rivers on the way, Serchio and Magra, is crossed.) On this northern side additional costly roads have been constructed, some along edges of precipices, ascending to new quarries at very high altitudes. Not only are these mountain faces being hewn away, but the very summits, which are snowcapped a great part of the year, are being cut down. Some of them, as Mont Altissimo Sarravezza, possess the most costly and durable statuary marble known. In addition to all this enormous output of block material, mills and manufactories for sawing and working the marble have increased, and are still increasing, at even a faster rate than the quarrying.

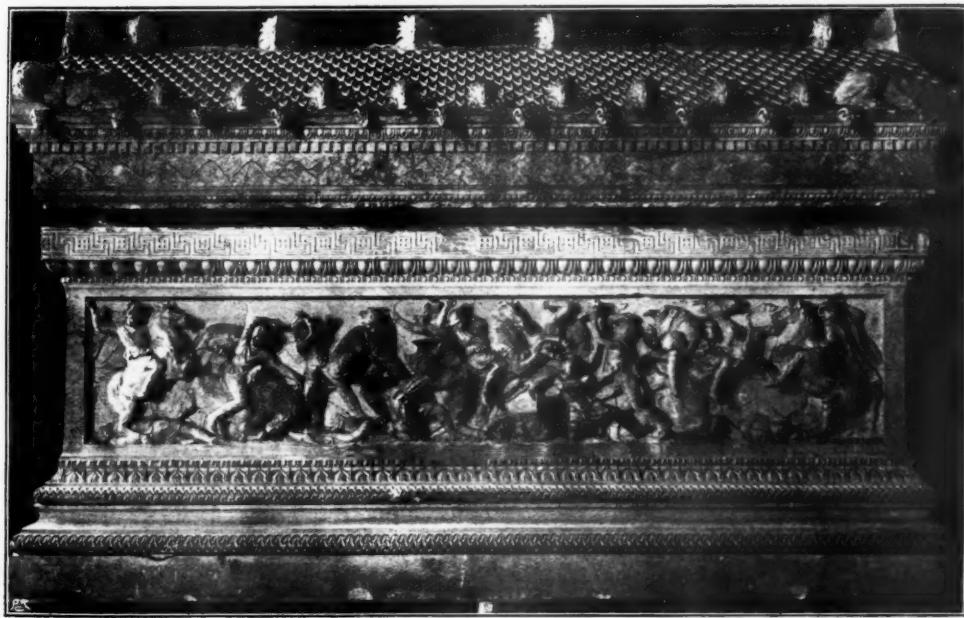
Until a few years ago, all these mills were worked by water power obtained from a stream with not a great fall. These mills increased as long as any water power remained. Now large establishments are erected in the plains nearer the railway and the sea, worked by suction gas engines of Italian make, the coal for which it pays to import from England.

Quarry proprietors and manufacturers are making money, and workmen's wages have increased, I am told, in ratio. The produce of white marble at Carrara almost supplies the



"THE MOURNERS" SARCOPHAGUS.

Lebah & Joailler, Photographers, Constantinople.



Sebah & Joailler, Photographers, Constantinople.
THE SO-CALLED "ALEXANDER" SARCOPHAGUS.

civilised world, the greater portion of which goes to America. These same remarks as to progress in the Carrara districts apply to others, such as St. Ambrogio, Verona, the red and yellow marbles of which have been judiciously used in England of late years. Belgium, Germany, Austria, and Sweden and Norway have also advanced.

Greece also has improved. In Thessaly the ancient quarries of verde antico are turning out immense quantities of splendid sound material of every kind that is to be found in the old buildings of Rome and Constantinople.

Of late years many important monoliths of verde antico have been quarried and used in England. At the present time blocks can be got as large as those used in St. Sophia, Constantinople. The whole of the blocks have sawn faces as cut direct from the solid rock by the aid of the wire saw. One square block I saw this last spring contained over four thousand feet cube.

The old Carystian quarries of Cipollino, on the island of Eubœa, have produced during the last few years over one hundred monoliths of large size: these have been used in important buildings in this country, Germany, and America. Shafts for columns can be obtained of practically any size.*

On the island of

Seyros are a series of old

ANCIENT MARBLE MONUMENTS (ATHENS NATIONAL MUSEUM).

quarries containing several varieties of red veined marbles: these are being reworked, and the marble is much in demand; some of it is very rich in colour, but unfortunately it is liable to be unsound.

There is a similar formation on the island of Salamis: it also is much shaken, probably by earthquakes.

At Mount Pentelikon, near Athens, on the southern face, are the old quarries of white marble from which the whole of the material was obtained for the classic buildings on the Acropolis and the Temple of Jupiter Olympus. The whole of the good veins, which descend into a deep cave in the mountain, appear to be worked out. There are a series of other

* The whites in this marble become with time a warm yellow, as seen in the examples shown in the room.



quarries on the same side of the mountain as the old workings: these have for many years been worked indifferently by the marble masons of Athens. The output is very little, but some is of good quality.* I had marble from these quarries twenty-five years ago. A few years ago a company was formed to work the marble on the north side of Pentelikon. For this purpose a railway has been constructed at great cost, and quarries have been opened. Much marble has been quarried, but the good vein of classic times on the south side has not yet been found. Large sizes are obtained, especially from the south base of Stamatovouni, an opposite mountain. Sawmills have been erected, fitted with good machinery; but as they have no water-power, coal has to be brought from England, and the sand for sawing from near Carrara. Two years ago I visited the Turkish island of Kos, near Rhodes, where there is a deposit of translucent oriental alabaster, with delicate chalcedony colour tintings. It can be quarried in large sizes, but the blocks contain holes. Small sizes can be got for vases, as used by the Greeks (for cremation sarcophagi). On the island of Samos are quarries of yellowish alabaster: this appears sound as seen in the steps on the "quay."

The general appearance of the present Greek little resembles the classic figures in sculpture with which we are familiar; but their ability to work marble seems "to run in the blood," as they cut it with as much ease and freedom as masons here cut soft stone. You see them executing long fluted columns from blocks lying on the ground, with no more setting out than a circle described at each end. They are now equally good at quarrying. All this skill has been acquired within the last generation. The output of the quarries in France, Spain, and Algeria is not on the increase. The noblest coloured marble the world has ever known (imperial Egyptian porphyry of "Mons Porphyrites") remains unworked. I would gladly give any assistance in my power to anyone having an honest desire to rework these unique quarries. We know its value from what we see in Rome, and there is, as I have seen myself, any amount of material remaining, and it comes to the surface.

We have in this country many excellent marbles of various colours, as well as black and white. Of late years some of these have been used in important buildings in London and the country, producing admirable work. If it were not for foreign competition, with cheap labour

* These quarries produced the marble used in the Government buildings of the University, the Academy of Science, and other important buildings in Athens.



AMAZON FROM EPIDAUROS (ATHENS NATIONAL MUSEUM).

and low freights, against our high railway rates, no doubt many of the marble rocks that are now dormant would be worked to the advantage of the land proprietors and the workmen.

As ancient marble quarries continue to be rediscovered they prove unmistakably that the Romans used very few coloured marbles in the decoration of their important buildings. The confusing multiplicity of names given to fragments dug up in Rome, and renamed by enthusiastic collectors like Corsi and others fifty years ago, are entirely wrong and misleading. It is now proved that as many as a dozen examples have all



STELE (ATHENS NATIONAL MUSEUM).



STELE (ATHENS NATIONAL MUSEUM).

come out of one quarry. Small fragments are often very deceptive.

The same coloured marbles and porphyry that are found in Rome are also found at Ephesus, Carthage, and other Roman colonial cities. This shows the ability of the old Romans to move their choice materials, even when of large size, to distant parts of their empire.

Monolith marble shafts to columns were universally used by the Romans, and the use has continued down to the present time. The old shafts were all wrought in the quarries, even

to the largest size, like those of the Temple of Antoninus and Faustina in the Forum of Rome. I recently found in one of my own quarries of cipollino at Styra a broken shaft seven feet in diameter. I think, perhaps, this is the largest known. It would work out at about fifty-six feet in length. Within the last few years a large number of coloured monoliths, extracted from at least eighteen different quarries in several countries, have been used in important buildings, chiefly by Fellows of this Institute. I doubt if since Roman times so many have been quarried and worked. At the present time there is little difficulty in getting them, and when selected and appropriately used as supporting columns they have the same impressive dignity as those remaining in Rome, Constantinople, and elsewhere. According to a very rough calculation, I consider there must be in Europe, North Africa, Egypt, and Asia Minor not less than ten thousand old Roman monoliths still existing, 3,500 of which are in Rome itself.

The sturdy shafts of the late Mr. Bentley in the new Westminster Cathedral are effective and quite equivalent to their cost. Fluting and reeding of a rich coloured shaft rarely pay for the additional effect obtained. Fluting is sometimes of use when a stone cannot be quarried the full length required and a joint has to be made. This is best done as seen in the giallo antico shafts of Trajan's Arch, now in the Arch of Constantine, Rome. The joint in this case is made one-third up, at the top of the reeds, which hide it.

Monoliths of rich marble used as architraves in large doorways or openings are always effective. The most imposing I know are those of the great entrance to St. Sophia, Constantinople: these are in verde antico. Those to the famous entrance of the Pantheon, Rome, are in white Greek marble. The monolith threshold in which the bronze doors work is Africano breccia. In the Pitti Palace in Florence the whole of the large doorways are in Rhondona breccia. Those of our National Gallery are rouge Etruscan, from near Chemora, Algeria. All these doorways mentioned are in three stones: two jambs and a head.



CRETAN STELE.

STELE OF DIODORA FROM THERPIA.
English Photo. Co.



BYZANTINE CAPITAL.

stone. I doubt not, if the material is properly selected, that the work would be lasting.

If economy in building is desired, then the Italian method of built brickwork, with marble slab casing, is a good one. The slab for bond and surface need not be more than three inches thick, and even less will make good durable work by using ashlar courses, say, of twelve or fifteen inches high, slightly projected, over three-inch bond courses; you then obtain similar effect to the walling of the Propylaea at Athens.

Another method for a good town house would be a brick building, faced in the style of the Palazzo Doria and other buildings in Genoa, where, along with the white marble facing, plaques of porphyry and colour are inserted in suitable white framings.

For marble work in London simple mouldings might be used, which would save cost. Small detail in a short time gets filled with soot. Marble buildings require occasional cleaning. It ought to be done with caution, as two or three methods now in use destroy the silicised surface, which is a preservative.

There is a cost difficulty in leaving our white marble work from the tool, as seen in all the Greek stele. Of all the marble buildings I know erected since classic times, none to me are more impressive than those of the duomo and baptistry of Pisa, and the duomo and churches of Lucca, where the marble is of a delicate translucent ivory tint, all left from the chisel. This gives quite a life-like effect as compared with our modern ground face work.

I have in previous Papers made some observations on different types of pavements. In Italy and the Netherlands we occasionally in pictures see pavements that have an honest look. In the Forum Romanum two mosaic ones in porphyry and marble have been recently unearthed.*

* Drawings of these, with others from Mr. Brindley's sketch-books, were shown at the Meeting.—ED.

Where boldly figured marble is used the mason's horizontal joint sometimes destroys the continuance of the coloured pattern.

In a boldly moulded simple cipollino doorway to my own house I have mitre-jointed this with a notch at the back. For small works, like mouldings round panels in monuments fixed on a slab, I do not see that there can be any objection to mitre-jointing. The Italians often use it.

At the present time there is a desire by certain architects to erect in London important buildings in white marble. If cost is no consideration, there is no difficulty, for the marble would then be used as any good building

The black and white marble tiles formerly used for pavements were thick, with rough backs, the squared edges being only about half an inch. These were prepared out of the quarry waste. Of late years the demand has so increased that it now pays to manufacture them out of block slab. There is also now a considerable demand for tiles about a foot square, or greater, of verde antico, Greek cipollino, and breccias. A pattern made with either of these and white is effective.

A white tile floor of different shapes, forming a pattern by jointing only, always makes a quiet, effective floor; black also does the same.

Thin tiles of marble can be prepared for walls to be used for the same purpose as encaustic ones are now used, and fixed by ordinary workmen in the usual way. Stone staircases to dark offices would be improved by white risers of tiles or slips of marble.

Marble chimney-pieces continue to be designed according to the orthodox proportions of the size of the rooms, even when the intention is to insert in them slow combustion grates. The effect is that the narrow grate looks like an afterthought, and the remaining space has to be filled up with tiles, or something that goes with neither the chimney-piece nor the grate. This can be obviated by designing specially for the purpose and still retaining the desired width. Heat expansion of both the grate and the chimney-piece ought to be provided for. Metal, which expands when hot, goes back to its former size on cooling; but I find marble, when heat-expanded, only goes partially back.

A few years ago I was desirous of having a fireplace in the narrow hall of my own house, and this had to be fixed on a wood floor. To do this I placed a three-inch slab of marble, large enough to hold the chimney-piece and make a hearth. The opening was made a little larger than the grate it had to receive. For convenience I got a local man to fix it. Finding, as he thought, the opening too wide, he laboured away and narrowed the lintel; but my own work turned out just as bad, for, after a few fires, the jambs were pushed open, and the thick hearth had three radiating cracks in it from under the fire to the outside of the slab, but, like a fireclay back, the cracks go no further. More than twenty years ago Mr. Norman Shaw jointed his hearths, and that is the only way to make them stand the fire.



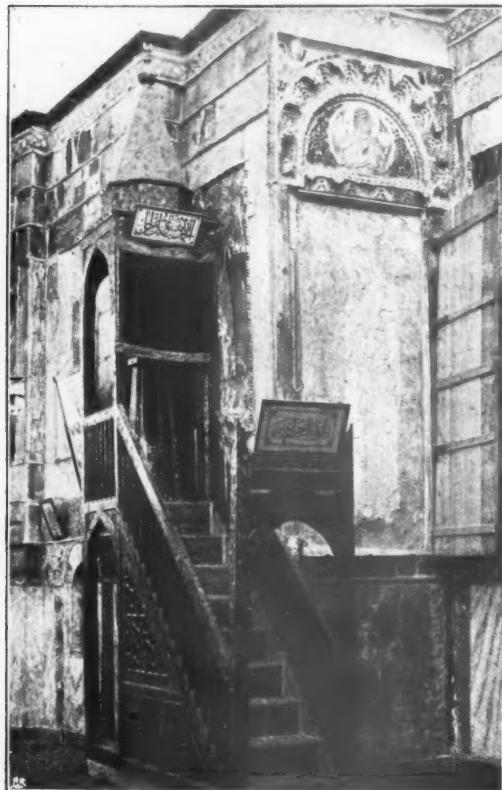
M. Zranić, Photographer

MOSQUE OF SULTAN BAYEZID, SHOWING VERDE ANTICO SHAFTS PROBABLY FROM THE CHURCH OF THE APOSTLES, CONSTANTINOPLE.

Until a few years ago marble fenders were made with ordinary curb sections, standing above the hearth as much as four inches, and four and a half wide. An infinitely better effect can be obtained, out of the same quantity of material, if the proportions are, say, six inches by three, with appropriate sections, with the bevelled moulding inward, in the same way as a picture frame is treated. This is far better than an outward bevel for looking down. With the bevelled moulding inward, the fender and hearth are seen at the same time, producing the effect of greater size. When the bevel is outward, the effect is not nearly so pleasing to the eye, for the hearth and fender then appear separate and distinct from each other.

When it is desired to place a dog-grate in the fireplace opening, an elliptical curved plan is made with five or six inch vertical strips of white marble, the inner angles only slightly touching. This will resist the fire and reflect the heat like a "Dutch oven."

In all countries from the most remote times the best stone obtainable has been used to erect memorials to the dead. Thus the Egyptians used granite, basalt, and alabaster; and the Greeks marble. When we visit the ancient cemetery in Athens, and admire the old erect stele *in situ*, then move on to the National Museum and study the continuous rows of sculptured stele and sarcophagi, and if we are able to visit the museum in Constantinople and admire the so-called Alexander Sarcophagus and others brought from Sidon (Asia Minor), of refined architectural designs and sculpture, with delicate tinting, we may then seriously ask ourselves, "Is our nation ever likely to approach the same standard of perfection?" There is no doubt this was the zenith of sepulchral art. Good, well-thought-out work on the same lines continued to be executed in marble all through the Roman period, as seen in



Sabah & Joailler, Photographers, Constantinople.

MOSQUE OF KAKRIEH.

the museums of Rome and Europe generally, including our own.

With the late Byzantine work coloured marble sarcophagi of large size in imperial porphyry and verde antico, of good simple design, with some originality, came into vogue (some of these have been illustrated in a previous paper). During this period very little marble was quarried; what they required was usually obtained by the destruction of early work or blocks left in the ancient quarries.

With the advent of Renaissance art in Italy marble monuments of every kind again came into use. There were erected large memorials on the walls of churches, sculptured slabs on the floor, and unique small tablets in the cloisters, all delightfully lettered in

readable characters, full of interest, and as various in design as they are numerous, some with the introduction of colour that have not yet been surpassed. These bridge us over to Westminster Abbey, where in similar design and colour we have the shrine of Edward the Confessor and the tomb of Henry V. These are the first works in this country that show us the colour value of imperial porphyry.

In England at this time Purbeck marble was being used; and although a perishable stone numerous skilfully designed tombs and recumbent effigies are still in perfect preservation.

Our English Renaissance monuments have a character of their own. They are mostly executed out of Derbyshire alabaster and black marble, the effect being heightened with gold and colour. These are works of which we may be justly proud, and in contrast with modern work they certainly hold their own. In Germany, commencing with Basel and following the Rhine by Mayence and Cologne, then through Belgium and Holland, we find late Renaissance monuments of somewhat similar character to our own. They are generally executed in black or black and white marble. Many of these show originality in design, and are well worth studying.

Of late years many good monuments have been designed by architects, and appropriately thought out to fit them unobtrusively for the buildings in which they have been placed. Many good men who are no longer with us, like the late John Sedding and Thomas Garner, have left us numbers of monuments equal to the old.

I am sorry to say this country imports annually thousands of tons of ready-made monuments in marble and granite for cemeteries and churchyards. The marble ones are nearly all made in Italy. There are probably not more than five in a hundred worth looking at. They are void of artistic character of any sort. I would put a tax on them, if only to prevent them contaminating public taste. They get into churchyards, destroying the individuality of the old local monuments and the old village mason.

The present advance in the use of marble as a decorative material for important buildings may be considered to have commenced about thirty-five years ago with the building of the Paris Grand Opera House, of which the late M. Garnier was the architect. The marble decoration of this edifice is still one of the sights of Paris. This work had considerable



Sebah & Joailler, Photographers, Constantinople.

MOSQUE OF KAKRIEH.

influence on architects both of this country and of America. Many of the workmen came over here on the completion of the work ; others went to New York and obtained employment on the various large buildings, such as hotels, insurance offices, and mansions, which have been erected regardless of cost.

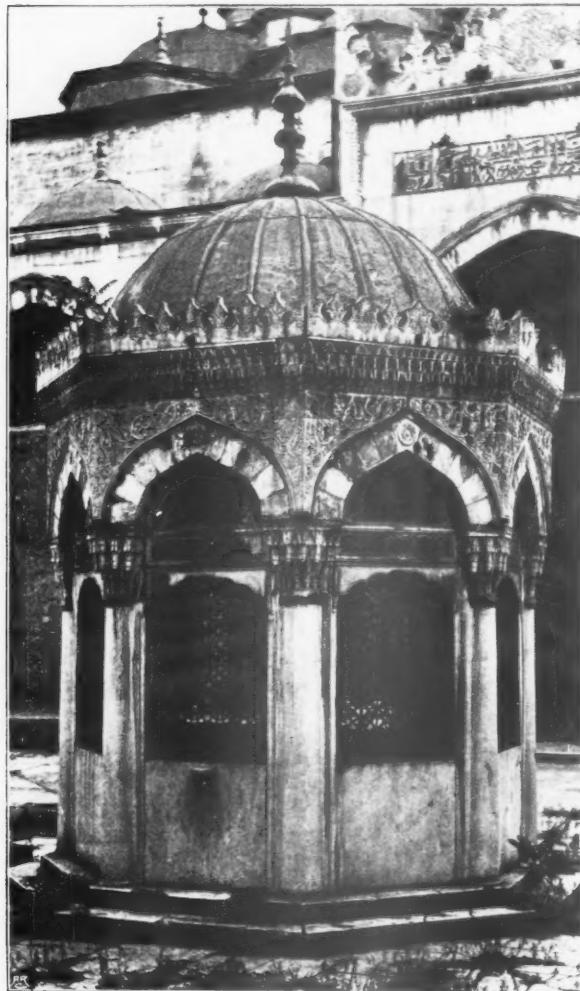
At the same time men of enterprise in London saw openings for good hotels here which they erected, coloured marbles being freely used to make the buildings attractive. Architects realised its value and introduced it further into municipal buildings, banks, insurance and other offices, museums, town and country mansions, theatres, and every description of building of importance.

Very little marble work was done in England previous to the introduction of workmen from Rome in 1268 to execute Edward the Confessor's shrine in Westminster Abbey, the mosaic pavement of the presbytery, and the tomb of Henry III. On the completion of these works the workmen would appear to have returned to Rome, or they may have been lent only by the Vatican to Henry III. for these special works.

Our Early English masonry carvings and sculpture in Purbeck marble of this period stand out as unique. The history of the workers has yet to be written. The designs for capitals are original, and are executed with skill in a masterly manner. They well understood the use of the drill and the value of perforation in their carvings, which have not been surpassed.

Good work in Purbeck marble continued to be produced through the later architectural periods, and during the Gothic revival much of

this marble has again been used for restoration and new work. It is difficult to say why Purbeck marble became so generally used throughout England, unless it was owing to its colour, which is a quiet neutral grey. When used, for instance, as continuous columns in a nave, this retiring colour would increase the effect of size rather than lessen it. The commercially convenient position of the rock for quarrying would also be in its favour. The



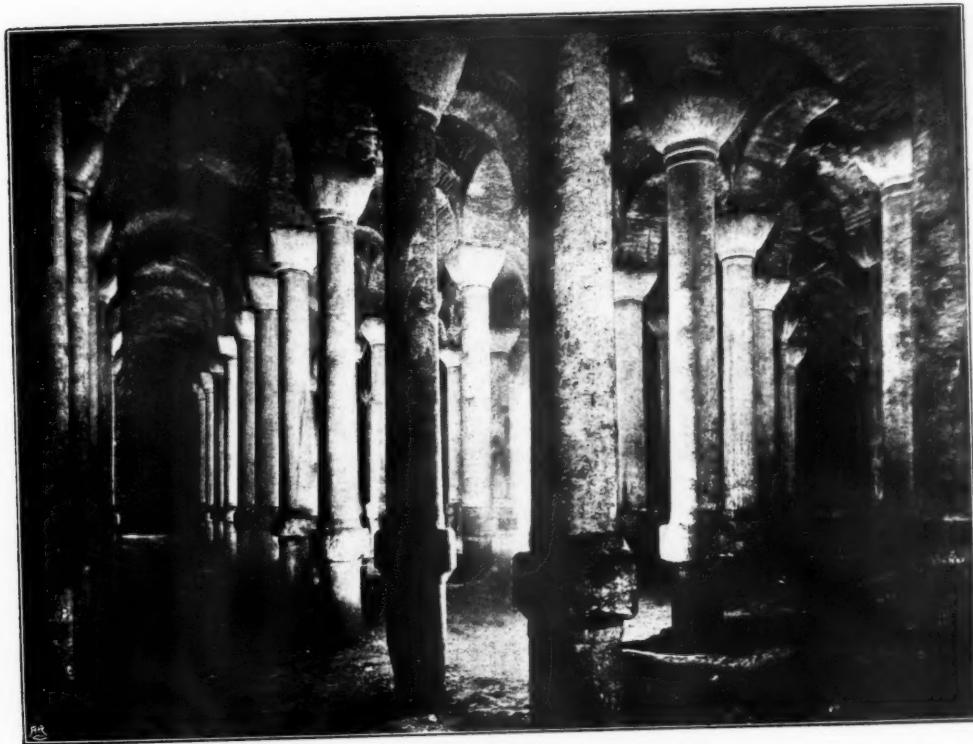
Gulmez Frères, Photographers.

FOUNTAIN IN COURT OF MOSQUE YENI-DJAMI.



MARBLE FOUNTAIN, CANDIA (ABOUT EIGHTEEN FEET ACROSS).

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RESERVOIR OF THE THOUSAND AND ONE COLUMNS, CONSTANTINOPLE.

D D



Gulmez Frères, Photographers, Constantinople.
CENTRAL GATE OF MOSQUE OF SULEIMANYEH.

Much in past time has been shipped abroad. The quarries still produce good stuff for which there is a large demand. It has also been used in several important buildings in New York, U.S.A.

At Holkham Hall, Norfolk, there are, in the entrance hall I think it is, eighteen fluted monoliths, shafts about sixteen feet long, designed by Kent; and there are also a number at Kedleston Hall, Derbyshire, designed by the brothers Adam.

The famous Knossos in Crete, with its labyrinths, is built in a large crystalline gypsum alabaster, in appearance like rock salt. It was quarried and squared on an adjoining hill. Owing to its being covered up it is in good preservation. The burnt material produced the cement for fixing.

There is in the Ephesian Room at the British Museum a carved circular pedestal of similar alabaster. The Bulls from Nineveh are made of the same stone.

From Renaissance times the French, the Italians, and the Russians have always been workers in choice hard stones for decorative purposes in connection with architecture; but none of these nations produce work displaying ability equal to that of the Chinese, who work rock crystal, jade, amethyst, and the like in a wonderful manner. The skill they display in their designs of contrast—small work against broad—is truly remarkable, and if these people, like the Japanese, should ever begin to work for the European market, objects suitable for use

marble beds are in the Purbeck formation and crop out in Durlston Bay, Swanage, which is delightfully sheltered, and has shelving rocks in the water from which sea craft could load. London from earliest times has been pitched and paved with Purbeck stone: the good beds of this formation produce one of the most durable stones found in England. The marble beds continue in the upland strata to near Corfe. From these numerous quarries it is an easy gradient to the sea at Swanage.

The marble used inland, as at Salisbury, would most likely be conveyed by pack mules, as is still done in countries where there are only natural roads.

Our English alabaster may safely be classed with marbles, although it is a sulphate of lime and not a carbonate. The quarries have been worked ever since the Norman period. It is a very useful material for interior decorative work, but it ought not to be used in any position where it is exposed to a heat of over 200 degrees Fahrenheit. It is especially adapted for the walls and operating rooms of hospitals, as it is not acted upon by ordinary acids.

From mediæval times until the present, it has been used extensively for sculpture, sepulchral monuments, and chimney-pieces.

in our houses, I doubt not they would produce something good. We ourselves in this country have never done much in this direction—the French and Germans at the present time are practically the only workers for Europe; but the work the Germans produce is generally of a very simple character.

There are a number of different-coloured marbles, of extra rich quality, which are mostly special beds in the rock mass. These, when opened out in two or four, produce panels which, like pictures, require framing. This is best done with a neutral contrast colour, or some quiet pattern marble of similar colour, either deeper or lighter in tone than the panel. What we have to guard against is destroying the wall space. If the stile framings are in strong contrast and deeply moulded, the panels have the effect of continuing underneath the stiles, unless a neutral strip surrounds the panel. If the frame is flush with the panel, this obviates the defect.

The beautiful church of Charlemagne at Aix-la-Chapelle, which is octagon in plan, with massive piers, has recently been cased with marble; and although archaeologists may stand aghast at the idea, still it has been done, and exceptionally well done, for it is covered all over with slabs of light-coloured cipollino in the handsomest way imaginable. The slabs are simply fixed in front of the present wall with bronze studs, the whole being perfectly hollow, the stud-holes only going into the wall. The old piers are in no way injured.

The simple marble wall lining designed by Sir Lawrence Alma-Tadema for his own studio some years ago is one of the best I know. It consists of nothing more than straight figured upright slabs, not wide, of grey-green cipollino, cut across the bed, and fixed slightly out of the upright with a batter. This method of sloping inwards I saw recently at Pompeii. The same applies to the square pedestal altars in the Temple of Eleusis and others where they have a slight diminish upwards.

Our National Memorial to her late Majesty Queen Victoria, now in progress, and the Indian Memorial Hall at Calcutta, must give impetus to the use of marble in both countries. I consider that marble is now being used in architecture in a broader and more dignified manner than was generally done thirty years ago. We now only occasionally see work that is garish; but this may sometimes have its use as advertisement, or, what is better, showing us what to avoid. One of our drawbacks is that we have too many marbles from which to select; nearly all the marbles of the world



Schulte & Joniller, Photographers, Constantinople
BYZANTINE (IMPERIAL OTTOMAN MUSEUM).

are brought into our markets. We have everything the Romans had, and in addition the produce of hundreds of modern quarries of every variety of colour.

In conclusion I will again repeat, the nearer we keep to working as the Romans did, with as few colours as possible, the healthier will be the effect obtained. I strongly advise young men to make notes of marble colour combination they see, not only of old work, but of new, if only to know what to avoid.



MARBLE TOMBSTONES, IN THE ASIATIC CEMETERY OF CONSTANTINOPLE.

** See, with reference to the subjects treated in the foregoing Papers, TRANSACTIONS, Vol. III. N.S. (1887), pp. 45-56, "Marble: its Uses as suggested by the Past," with a list of the principal quarries worked in the time of the Romans, by W. Brindley; some Addenda by Dr. Edwin Freshfield [H.A.], and illustrations of marble pavements and wall decoration. See, further, TRANSACTIONS, Vol. IV. N.S. (1888), pp. 5-14, "The Ancient Quarries of Egypt; with an Account of a Recent Journey across the Eastern Desert," by W. Brindley, with illustrations of porphyry pavements and pulpits and wall mosaics in Coptic churches. References to marbles and marble ornament found in North Africa are given in the TRANSACTIONS, Vols. I. and II. N.S., in the Papers on the Roman Occupation of Algeria and Tunisia, by Mr. Alex. Graham, F.S.A., Hon. Sec. See also a series of Papers on "The Use and Abuse of Marble for Decorative Purposes," by Professor Aitchison, R.A. [F.], the late William Young, and W. Brindley [JOURNAL, 22nd April 1895]; Professor Aitchison's R.A. Lecture on Marble [JOURNAL, 17th Oct. 1903]; and "Santa Sophia, Constantinople," by W. Brindley [JOURNAL, 9th Dec. 1905].

DISCUSSION OF THE FOREGOING PAPERS.

The President, Mr. THOMAS E. COLLCUTT, in the Chair.

MR. J. J. BURNET [F.], A.R.S.A., who was called upon by the President, said he felt that it required one of far greater erudition than he to appreciate adequately what Sir Lawrence Alma-Tadema had made them enjoy, as well as the vast fund of information Mr. Brindley had given them on the various qualities of marble and the uses to which that material could be put. He pleaded second to none, however, in his affection for their great painter Sir Lawrence Alma-Tadema, and his power to give them the sentiment of marble and of marble work; and he believed Sir Lawrence could find no more sympathetic audience upon the subject than the one present in that room. He was proud to voice the feeling of the Meeting in thanking Sir Lawrence for coming among them that evening. From his (the speaker's) point of view as an architect, Sir Lawrence had only increased their burden of professional responsibility. He had called to their minds the vitality of the material for decorative purposes, and it seemed as though the architect would never cease to have heaped upon him responsibilities for decorative employment of materials and labour. Many architects present must have listened with profound agitation both to Sir Lawrence's delicate descriptions of marble work and to the enormous number Mr. Brindley had set before them of quarries of materials, and the uses to which such materials could be put. It was a very grave matter, indeed, for architects nowadays to have not only to consider the infinite variety of the needs of their clients; but if those needs were to be expressed with any poetry worthy of the name of architecture, the architect had also to include the study of an infinite variety of material capable of infinite treatment by an infinite number of machines, and by a great number of men each possibly consecrating his life to the better development of his own craft. He thought architects deserved great sympathy for the position in which they seemed to stand. He begged to move, and he was sure the Meeting would receive it with an enthusiasm which his efforts could not call forth, a vote of thanks to Sir Lawrence Alma-Tadema for his kindness in coming among them to speak on a subject which they knew he loved so much, and which he had taught them to love, and to Mr. Brindley for putting before them so many views of the life of the quarry and the variety of methods with which its material could be used.

MR. HUGH STANNUS [F.], A.R.C.A., said he felt his utter unworthiness to speak on a subject which was so very large; but if he might venture to

divide the treatment of marbles into two branches, he would say that, first, they might treat marble as being all of the same colour, in which case it would be merely considered as a finer kind of stone. Using marble in that manner reminded them of the architectural details in the past which had been made of monochrome marble, of that beautiful golden colour of the Pentelic marble, the Hymettan marble, with a bluish-grey tone; or the marble of Carrara being all of one colour was particularly suitable to work in for mouldings. As regards coloured marble, which is the most suitable for *flat* surfaces, *e.g.*, bands, styles, and panels, Nature herself had provided the decoration of the material. The beautiful colour (and the value of colour Sir Lawrence had spoken of that evening) and the wonderful varieties of colour did not need, and should not allow, decorative treatment to be applied. The remark that was made against fluting a variegated marble column had his entire sympathy. He felt how the flutes killed the variegation of the marble, and the variegation of the marble killed the flutes; so that the two militated against each other, and, as always happened in such cases, the result was bad art. Sir Lawrence had spoken about the manner in which the Romans used a marble veneer. This reminded him how very ingeniously this veneering was done in some of their temples, the mouldings being slightly bevelled, so as to hold the slabs in place. Sir Lawrence had spoken of the marble he had seen at Pompeii. All the Pompeian work seemed to him to be of the most shoddy description. There were imitations of marble *in paint*, but he had not seen a single slab of marble applied to a wall. He had not, however, looked with that exhaustive eye that Sir Lawrence brought to bear upon the work. He congratulated Mr. Brindley, and he might also say he congratulated the profession, on the manner in which Mr. Brindley had discovered the fine old quarries of the ancient world. It was a very observant remark Sir Lawrence had made, that in the Middle Ages people seemed to care so little for marble that actually the places where the marble was quarried were forgotten. It was only when a man had indomitable perseverance and great technical knowledge that he could hope for success in hunting these out. Mr. Brindley had done that; he had laid the riches of the coloured marbles at the feet of the architects; and it was for them to enter into possession. It had never been his good fortune to use very much marble, but he had always felt that in Mr. Brindley they had an advising friend who would give advice,

not only about the wearing, but the heat-standing qualities, without which, however beautiful marble might be, they as architects would be as children. Coming to the question of the use of coloured marbles would need a treatise on colour decoration—and at that late hour it was not desirable. He felt that the Papers that evening could be added to several other Papers that they had had the privilege of hearing there. He remembered in particular one very thoughtful Paper by the late Mr. John Seddon on colour decoration, in which he considered the question as to whether the constructive features should be made dark or light. Of course every architect in dealing with coloured marbles in his work had to consider that question: Should the constructive part be emphasised and the panelling be kept quiet, or should the constructive work be kept light in tone, but the panel be dark? But these were matters with regard to which every case had to be determined on its own merits. Recalling the remark in which it was said of Augustus that he found Rome brick and left it marble, he thought in the last twenty years they had seen a wonderful development of the use of marble in their theatres, their restaurants, and their public buildings—in the town-halls, for instance, that had sprung up in various parts of the country. Whereas in the old days there would have been wooden counters they had now marble counters, and where there would have been plastered columns they had now marble columns. And when one found there was that great demand for marble, and how the demand had brought the supply—he meant the supply of brains—that the architects, finding that they had to use marble, had studied the best means of using it—one could quote one town-hall after another where marble had been used to the satisfaction of the client and the great credit of the architect—then it was to men like Sir Lawrence Alma-Tadema, who had helped by his wonderful art to spread abroad the *taste* for marble, and also to men like Mr. Brindley, who had helped them to the *material*, that they were all indebted. He had very much pleasure in seconding the vote of thanks—to Sir Lawrence Alma-Tadema and to Mr. Brindley—for these two admirable Papers, which would improve as they read them, and he was quite certain that those who had to deal with the subject would lay them to heart and preserve them for reference.

MR. ARTHUR H. REID [F.], whom the President introduced to the Meeting as *Hon. Sec. R.I.B.A.* for South Africa, and Past President of the Transvaal Institute of Architects, said he had great pleasure in supporting the vote of thanks to the lecturers; he would also take this opportunity of thanking the Institute for the pleasure it had afforded him to undertake the representation of the Institute in South Africa. It would be a very great pleasure to him to do what he could to further the interests of the Institute among the

profession in that country. At the same time he would, on behalf of his brethren in South Africa, thank not only the Institute which provided them, through these most interesting and edifying lectures, with refinements which they were rather cut off from by living so far away from the old country, but of thanking all those gentlemen who gave up their time and brains to preparing Papers for the edification of those who would read them in the *JOURNAL*. He did not know whether members of the Institute ever thought about those who were labouring far away from home, or if they ever realised the amount of pleasure that the Proceedings which emanated from the Institute afforded to those who were so far away from the centre. But he could assure them that it was one of those things, as mails came in, that they, living in the Colonies, waited for and were ever looking forward to. Like his friend Mr. Burnet, he had been wondering why he, of all people, should have been called upon to support this Resolution; but on considering the matter he thought that a more appropriate person could hardly have been selected, for this reason: he came from a country where, beyond the arts of digging gold, making money, and importing slaves, they were credited with nothing. The architects of South Africa generally, so far as modern art went, claimed nothing beyond doing their duty as members of an art profession. Of course they had aboriginal art there, and it was a peculiar trait in South African history that of the only indication or relics of art to be found in South Africa the races which produced the art were absolutely extinct. He referred in the first place to the Zimbabwe ruins in Northern Rhodesia, and in the second place to those marvellous artists, the Bushmen. It was very strange that those Bushmen in their paintings should have selected the stony faces of caves to work upon, and few examples were found of their art applied to wood or textile fabrics. That fact fitted in very well with the two *stony* lectures of that evening, and perhaps accounted, unconsciously, for his being asked to support this vote of thanks, which he did with very great satisfaction.

THE PRESIDENT, in putting the vote of thanks, said they had listened with very great pleasure to the Papers, and he was sure they should gather very much from what they had heard. There was one point that had not been touched upon at all in a practical way—viz., that they were using now a great deal of marble inside their buildings, and it was also proposed in some places that they should use it outside. In this connection the question of polishing was a material question that should be very deeply considered. It appeared to him that where they had used marble in the interior of buildings they had spoilt to some extent the beautiful qualities of the material by over-polishing. There were some marbles which he thought would look more

beautiful with a very slight polish, or even without any polish at all. It might be due perhaps to their clients, rather than to their own taste ; but he felt sure that in the great majority of cases the marble lost by the high sort of French polish, spirit polish, that was put upon it. With regard to using marble for the outside of buildings, he thought they would stand a chance of losing much of their beauty if they were polished upon the exterior of buildings. He did not know whether the Meeting would be with him on this point, but in the use of Aberdeen grey granite, for instance, directly it was polished a sort of common appearance was given to the work ; whereas if it was left at the fine sanded clean face, the material had a most delicate beautiful colour. Those were points which architects should consider in using marble. He could illustrate it by the use of Purbeck in the restoration of Salisbury Cathedral. In the old work he had no doubt that if there was any polish at all it was so slight that it would not tell very much in the colour ; but now in the restored building the restored columns were perfectly black, and this against the grey stone was too great a contrast : the black columns seemed to hit one in the face altogether, and a great deal of the beauty of the building was lost through the strong contrast of the common colour that the Purbeck cast upon the work. He did not know, even if they had marble buildings in London, that they could improve upon the colour of the south front of Somerset House. After all, when Portland stone had been weathered, and had taken on the delicious grey tones of the front of Somerset House, he thought there were very few marbles for this climate, and for outside work, that could be superior to it in colour and general appearance.

SIR L. ALMA-TADEMA, in responding, said he could not tell them how gratified he felt that his little effort should have found so kind a reception, especially, as Mr. Reid had pointed out (a thing which one sometimes forgot), when in addressing the Institute one addressed the world of architecture. When they received the JOURNAL they sometimes forgot that their brethren and friends in South Africa, in Canada, in New Zealand, in Hong Kong, all over the world, received it also—and perhaps he might have been frightened at the thought of it ! Still, there it was ; they had

accepted it kindly, and he thanked them for it. Might he be allowed one remark—as it arose perhaps more from his Paper than Mr. Brindley's—on the question of how far the tasteful use of marble was improved by over-polishing ? It was more or less like pictures. Pictures over-varnished became ghastly ; he had, in fact, mistaken over-polished marble for slate painted as marble. It looked like imitation. There must be a certain film to protect the marble—that was understood—because the difficulty of marble was that the different parts of it were not of the same density, and some parts absorbed more of the muck of the atmosphere than others ; and as they sized a gilt frame in order to be able to wash the dirt off, so they ought to do something similar for the marble—but please, as little as possible !

MR. BRINDLEY, in responding, said he had to thank Sir Lawrence also for making a little speech for him and leaving him nothing to say. He should like to add, however, that he was quite with the President in regard to his remarks about marble polishing. They might go through the whole of the East and they would find very few things that were polished, and those with only an egg-shell "glimmer" polish. When they admired in their museums the great works of art they contained, it never occurred to them that they were not polished—they were perfectly satisfied with them. He had his own feelings about marble for London. They might put up whatever marble buildings they liked in London, but they would never make a St. Paul's.

MR. R. LANGTON COLE [F.], writing since the Meeting, says :—

I listened with great interest to the two Papers on this subject, and should like to point out, with all deference, that the use of marble, as we use it now, for purely decorative purposes is very much older than was suggested by Sir L. Alma-Tadema. He mentioned slabs, real and imitation, at Pompeii ; but a dado of cement, painted to imitate a veined marble, was found at Knossos, the date of which is believed to be at least 1200 B.C. If marble could be imitated at that time, it must have been well known, so that the use of marble veneer must be placed earlier still, and is at least far older than the commencement of the civilisation of Greece or Rome.



9, CONDUIT STREET, LONDON, W., 26th Jan. 1907.

CHRONICLE.

THE PRIZES AND STUDENTSHIPS 1907.

Council's Deed of Award.

The Designs and Drawings submitted for the Institute Prizes and Studentships are now on exhibition in the Gallery of the Alpine Club (entrance in Mill Street, Conduit Street, W.). The Council's Deed of Award, read at the General Meeting of the 21st January, gives particulars of the competitions and the results thereof as follows:—

THE ROYAL INSTITUTE SILVER MEDALS.

(i.) The Essay Medal and Twenty-five Guineas.

Six Essays on "The Influence of the Use of Iron and Steel on Modern Architectural Design" were received for the Silver Medal under the following mottoes:—

1. "Autres temps autres mœurs."
2. "Dorus."
3. "Fonte."
4. "Press Onward."
5. "Sanctus Raymundus."
6. "Three Ages."

The Council have awarded the Medal and Twenty-five Guineas to the author of the Essay submitted under motto "Three Ages" [Victor D. Horsburgh *A.*, 23 Rutland Square, Edinburgh], and a Certificate of Hon. Mention to the author of the Essay bearing the motto "Fonte" [A. Halcrow Verstage *A.*, Godalming].

(ii.) The Measured Drawings Medal and £10 10s.

Six sets of Drawings were sent in of the various buildings indicated, and under mottoes as follows:—

1. "Adze": 5 strainers (Trinity College Library, Cambridge).
2. Device of Heraldic Head of Horse: 5 strainers (Kirby Hall, Northants).
3. "Spero": 5 strainers (The Orangery, Kensington Palace).
4. "Swallow": 6 strainers (Stoke Castle, Shropshire).
5. "Thrum": 5 strainers (St. George's Church, Hanover Square).
6. "Waynflete": 6 strainers (Magdalen College, Oxford).

The Council regret that they are unable to award the Medal, but they have granted Certificates of Hon. Mention to the delineators of Magdalen College, Oxford, and Stoke Castle, Shropshire, submitted under the mottoes "Waynflete" [R. Wynn Owen, 60 Castle Street, Liverpool] and "Swallow" [David Robertson, Huntley Terrace, Kelvininside, N. Glasgow].

THE TRAVELLING STUDENTSHIPS.

(i.) The Soane Medallion and £100.

Fifteen designs for a Large City Hotel facing a Public Square were submitted under the following mottoes:—

1. "Applique": 6 strainers.
2. "A.T.": 9 strainers.
3. "Aero": 6 strainers.
4. "Cameo": 6 strainers.
5. "Cid": 7 strainers.
6. "Dentil": 7 strainers.
7. "I Parve": 7 strainers.
8. "Kokrel": 6 strainers.
9. "Novo": 7 strainers.
10. "Pan": 3 strainers.
11. "Pax": 7 strainers.
12. "Rush": 6 strainers.
13. "Silver Shield": 7 strainers.
14. "Simplex": 5 strainers.
15. "Urn": 4 strainers.

The Council have awarded the Medallion and (subject to the specified conditions) the sum of One Hundred Pounds to the author of the design bearing the motto "Cameo" [Harold Cooper, 21 Oakley Crescent, Chelsea] and Certificates of Hon. Mention and Ten Guineas to the authors of the designs bearing the mottoes "Simplex" [Anthony R. Barker, Greenhill, Harrow] and "Urn" [A. J. Pitcher, "Launceston," Lindsey Road, Worcester Park].

(ii.) The Owen Jones Studentship and £100.

Two applications were received for the Owen Jones Studentship from the following:—

1. Robert Atkinson: 6 strainers.
2. Arthur R. H. Jackson: 6 strainers.

The Council have awarded the Certificate and (subject to the specified conditions) the sum of One Hundred Pounds to Mr. Arthur R. H. Jackson, Royal College of Art, South Kensington.

(iii.) The Pugin Studentship and £40.

Three applications were received for the Pugin Studentship from the following:—

1. F. Townsend Clark: 6 strainers.
2. A. J. Margetson: 6 strainers.
3. Wilfrid L. Travers: 6 strainers.

The Council have awarded the Medal and (subject to the specified conditions) the sum of Forty Pounds to Mr. A. J. Margetson, 1 Gordon Road, Handsworth, Birmingham.

(iv.) The Godwin Medal and £65.

One application only was received for the Godwin Bursary—viz., from Mr. E. J. Kay. The

Council regret that they are unable to award the Bursary for this year.

(v.) *The Tite Certificate and £30.*

Twenty-one Designs for a Loggia for Sculpture to screen the Blank End (150 feet long) of a building were submitted under the following mottoes:—

1. "Altiora Petamus": 3 strainers.
2. "Crown": 4 strainers.
3. "Cheiro": 4 strainers.
4. "Delta": 4 strainers.
5. "Ecclesiastes": 4 strainers.
6. "Forced Draught": 4 strainers.
7. "Gradus": 3 strainers.
8. "Heart-easing Mirth": 5 strainers.
9. "Hermit": 4 strainers.
10. "Ionicus": 3 strainers.
11. Device of a Wreath: 3 strainers.
12. "Meg": 6 strainers.
13. "Nisi": 5 strainers.
14. "Orne": 3 strainers.
15. "Robinson Crusoe": 3 strainers.
16. "Si jeunesse savait: si vieillesse pouvait": 4 strainers.
17. "Spread Eagle": 3 strainers.
18. "Valhalla": 4 strainers.
19. "Vincit qui patitur": 3 strainers.
20. "Vita": 3 strainers.
21. "Vignola": 5 strainers.

The Council have awarded the Certificate and (subject to the specified conditions) a sum of Thirty Pounds (which will this year be augmented by the sum of £20 from the funds of the Wimperis Bursary on the condition that the period of travel be extended from four to six weeks) to the author of the design bearing the motto "Vignola" [G. Salway Nicol (A.), King's Court, 117 Colmore Row, Birmingham], and a Certificate of Hon. Mention and £10 10s. to the author of the design under motto "Nisi" [P. Napier Hemy, Hampden House, Phoenix Street, N.W.]

THE ARTHUR CATES PRIZE: £40.

Applications for the Arthur Cates Prize were received from the following:—

1. W. W. J. Calthrop: 6 strainers.
2. Frank Dyer: 6 strainers.
3. W. Dathy Quirke: 6 strainers.

The Council have awarded the Prize to Mr. W. W. J. Calthrop, 41 Doughty Street, W.C.

PRIZE FOR DESIGN AND CONSTRUCTION.

The Grissell Gold Medal and £10 10s.

Four designs for a Grand Stand constructed of Timber on a Race-course were submitted under the following mottoes:—

1. "Hurst Park": 4 strainers.
2. "Royal Ascot": 3 strainers.
3. "Sceptre": 4 strainers.
4. "Video": 5 strainers.

The Council have awarded the Medal and Ten Guineas (with an additional £10 10s. from the funds of the Wimperis Bursary) to the author of the design bearing the motto "Royal Ascot"

[W. A. Mellon, 3 Great College Street, Westminster, S.W.].

THE ASHPITEL PRIZE 1906.

The Council have, on the recommendation of the Board of Examiners (Architecture), awarded the Ashpitel Prize (B. oks value £10) to Mr. James Theodore Halliday, Hawthorn House, Wellington Road South, Southport, who was registered Probationer in 1901, Student in 1903, and passed the Final Examination in December 1906.

THE TRAVELLING STUDENTS' WORK.

Godwin Bursary 1906.—The Council have approved the Report of Mr. H. Inigo Triggs (A.), who was awarded the Godwin Bursary 1906, and who travelled in Paris, Berlin, Vienna, and Munich.

Pugin Studentship 1906.—The Council have approved the work of Mr. G. Drysdale, who was elected Pugin Student for 1906, and who travelled in Kent and Sussex.

The Deed of Award bears date 21st January 1907, and is signed by Thos. E. Colleutt, Chairman; Ernest George, Edwin T. Hall, John Jas. Burnet, Members of Council; Alexander Graham, Hon. Secretary; W. J. Locke, Secretary.

The American Institute of Architects: Presentation to Sir Aston Webb, R.A.

American papers now to hand give details of the functions, business and festive, held in Washington to celebrate the fiftieth anniversary of the foundation of the American Institute of Architects. To signalise the event the American Institute had founded a Gold Medal, the intention being, in the words of the President, Mr. F. M. Day, "to mark distinguished achievements in architecture wherever found." That the first to receive this distinction should be an Englishman is an honour of which his countrymen the world over are very legitimately proud; and it is especially gratifying to members of the Institute that the distinction should have fallen to their Past President, Sir Aston Webb.

Sir Aston crossed the Atlantic about Christmas-tide to receive in person the honour destined for him, and at the same time to represent the R.I.B.A. at the American celebrations. In the latter capacity he was the bearer of the following message from the President and Council:—

To the President,

The American Institute of Architects,—

Sir,—We, the Council of the Royal Institute of British Architects, have the honour to request you to convey to the American Institute of Architects our warm congratulations on the occasion of the fiftieth anniversary of its foundation.

We felicitate you from our hearts, not only on account of our brotherhood in the great art which

it is the precious privilege of our respective institutions to foster, but also on account of our kinship in race and language, which makes us take a special interest in the contemporary architecture of your great country and in its glorious future which the American Institute of Architects will have so large a share in moulding.—We have the honour to be, Sir, on behalf of the Council,

Yours sincerely and fraternally,

T. E. COLLCUTT, *President.*

HENRY T. HARE, *Member of Council.*

JAMES S. GIBSON, *Member of Council.*

ALEXANDER GRAHAM, *Hon. Secretary.*

W. J. LOCKE, *Secretary.*

The presentation to Sir Aston Webb was made before a brilliant assembly at Corcoran Art Gallery on the 8th inst., and at the subsequent banquet given by the American Institute, which was attended by Mr. Elihu Root, Secretary of State, various members of the American Senate, and other distinguished guests, the following letter on behalf of the King from Lord Knollys, addressed to Sir Mortimer Durand, the then British Ambassador to the United States, was read by the President of the American Institute:—

“DEAR SIR MORTIMER,—Sir Aston Webb has just started for Washington to receive there the Gold Medal which the American Institute of Architects has lately instituted. The King would be glad if you would have the goodness to explain to the President of the Institute His Majesty’s satisfaction at having their first Medal presented to an Englishman, and to one of such professional repute as Sir Aston Webb.

“The King would be glad if you would add that he wishes every success to the Institute.—Believe me, yours sincerely,

KNOLLYS.”

A letter from President Roosevelt was read as follows:—

“I wish I could be present at the dinner of the American Institute of Architects this evening, but as I already have two engagements I regret that it will be impossible for me to attend. I fully appreciate the significance of the occasion and the honour which the Institute has conferred upon Sir Aston Webb. Will you extend my hearty congratulations and best wishes to the distinguished recipient of the medal and to the American Institute of Architects?”

The following is an extract from the Address delivered by Mr. F. M. Day on the occasion of the presentation:—

“The American Institute of Architects establishes upon this the fiftieth anniversary of its foundation a Medal the intention of which is to mark distinguished achievements in architecture wherever found. To you, Sir Aston Webb, it will be our privilege to-night to give this Medal, and we are gathered here to signalise not merely by that token, but by our presence, the admiration that

we feel for your works and the respect that we entertain for your career.

“That this Medal should first be given to an Englishman needs little explanation. A reasonable modesty might well constrain us to look beyond our own borders, and it is but natural that our thoughts should centre on that land with which, more than with any other, we are united by ties of race and thought.

“We received from you the traditions of Inigo Jones and Sir Christopher Wren, traditions that gave vitality and character to our colonial buildings, and at a later time the Classical revival that swept over Europe reached us directly from its English source. William Thornton, who designed the Octagon, he who stamped a definite and noble character upon the nation’s Capitol—Thornton, no less than his patron Thomas Jefferson, gained his knowledge of classic architecture from those studies of it in which your countrymen were pioneers.

“It is from among men such as these that we have chosen you, Sir, a younger but no less distinguished man to confer upon you an honour which we shall, perhaps, not frequently award; and, therefore, and because an ancient custom sanctions it, I am to recount in good set terms the reasons that have moved us to choose you as our Medallist.

“In the midst of these large affairs you have not neglected to perform a labour of love in the restoration of ancient edifices, as at the fine old Norman church of St. Bartholomew the Great, the oldest church in London, which for well-nigh thirty years has been within your charge, and which you have rescued from neglect and ruin, and wisely rehabilitated.

“That your talents have not been unrecognised by your countrymen is shown by the volume of your works, by the honour of knighthood conferred upon you by the King, and most of all by your election as a Royal Academician.

“And now, Sir, because you have these qualities, and because for a lifetime you have dedicated them with signal success to the service of your profession, the American Institute of Architects confers upon you its Medal for distinguished achievement.”

Sir Aston Webb, in the course of his response, briefly sketched the history of architectural design in England, and eulogised the work of American architects, speaking of the splendid architectural achievements he had seen and admired in Washington, Philadelphia, and New York during the few days he had been in the country. Thanking the American Institute for the honour he had received at their hands, he said it was beyond his power to express adequately the grateful appreciation that he felt, and that he believed his brother architects at home would feel, at the great honour the American Institute had been pleased to confer

upon English architects through so unworthy a representative as himself ; for he could not but recognise in the award the desire to honour English architects generally, from which stock he was proud to think that American architects had sprung. There was much in their architecture that was familiar to an Englishman arriving in the country, and there was much that was unfamiliar, and therein, he thought, lay the charm.

Sir Aston and Lady Webb have since visited Boston and other cities of the United States, and appear everywhere to have met with a really royal reception. They sailed for England on the 19th inst.

The Papers on Marbles.

The Papers on Marbles last Monday attracted an exceptionally large audience, the Meeting-room being full to overflowing. Sir L. Alma-Tadema, the author of the first Paper, lent for exhibition an interesting series of photographs and drawings of interiors, showing marbles and painted imitations of marbles, at Pompeii. The gifted artist himself is seen in the photograph on p. 170 in a stooping posture measuring part of a wall in the House of Sallustius at Pompeii. The photograph was taken about twenty-five years ago. A large number of photographs and drawings, together with specimens of the following marbles, rough and wrought, were kindly lent by Mr. Brindley, and formed an extremely interesting exhibit.

Whites.—Statuary and ordinary whites of Greece, Italy, Sweden, Norway, Spain, Turkey, and India.

Blacks.—English and Irish, Greek, Italian, Belgian.

Reds.—Greece, Italy, France, Spain, Belgium, Austria, Devonshire.

Greens.—Greek, Italian, French, Spanish, American and Indian, English and Greek Cipollinos.

Yellows.—Tunis, Algeria, Spain, France, Greek Islands.

Alabaster, Oriental.—Asia Minor, Egypt, Italy, Spain.

Alabaster, Ordinary.—Derbyshire, Staffordshire, Cumberland.

Onyx.—Mexico, Arizona (U.S.), Algeria, Tunis, Egypt.

Porphyry.—Egypt, Greece.

Rare Stones.—Chinese Jade (thirty wrought specimens) and New Zealand Avanturine, Lapis Lazzuli, Canadian Blue, Jaspers, &c.

The London County Hall Competition.

At the weekly meeting of the London County Council the following report of the Establishment Committee was considered, and the recommendation contained therein agreed to :—

" We have given further consideration to the question of the time to be allowed for the competitions for designs for the new County Hall, and have considered a letter from the Royal Institute of British Architects, which suggests that nine months should be allowed, six of which should be devoted to the preliminary part of the competition. The time which it was originally proposed should be allowed was eight months, four months to be devoted to each part ; but we think the Council will be well advised to allow the additional month sug-

gested, and we have accordingly requested our chairman to ask leave of the Council to make the necessary alterations in the conditions when the same are under consideration by the Council.

" We propose that, in accordance with the practice which we understand usually obtains, a fee should be charged for copies of the conditions and particulars, &c., issued to intending competitors in connection with the competition for designs for the new County Hall, and we think that a fee of £3. 3s. in this instance will be suitable. This fee will be returned on receipt of a *bona fide* design, or if on receipt of the conditions any architect decides not to compete and returns the conditions, &c., within two weeks. We recommend that a charge of £3. 3s. be made for each copy of the conditions, &c., supplied to architects desiring to compete in the preliminary stage of the competition, the fee to be refunded on the receipt of a *bona fide* design, or if on receipt of the conditions any architect decides not to compete and returns the conditions, &c., within two weeks."

Mr. Edwin T. Hall [F.] sends the following correction :—" At page 155 of the last JOURNAL I am reported as saying that one of the Assessors in this competition was nominated by the County Council and one by the Institute. This is inaccurate. What I said was that the Institute had suggested that Mr. Riley should be one of the Assessors."

The late Colonel Lenox Prendergast [H.A.].

Colonel Lenox Prendergast [H.A.] died at his residence in Thurloe Square on Saturday, the 19th inst., at the age of seventy-six. Formal announcement of the sad event was conveyed to members by the Hon. Secretary, Mr. Alexander Graham, F.S.A., at the General Meeting last Monday in the following terms :—" I am sure that every member of this Institute who noticed the announcement in *The Times* and other papers this morning of the decease of Colonel Lenox Prendergast must have felt that we had lost an old friend and a very kind and sincere well-wisher of this Institute. Elected an Honorary Associate as far back as 1878, Colonel Prendergast always evinced a lively interest in the concerns of the Institute, and when our Standing Committees were formed he was one of the first members appointed by the Council to take an active part in the work of the Literature Committee. Since that time, now nearly twenty years ago, Colonel Prendergast had been almost continuously a member of that Committee, giving constant evidence of his knowledge of and love for architecture, and his desire to extend the usefulness of the Institute Library, especially in works relating to Italian art, of which he was an earnest student. In attending the meetings in this room Colonel Prendergast not only showed appreciation of our art and work, but he was always ready to take an active part in discussion on matters in which he was well versed

and competent to speak upon. I think, therefore, in sending a letter of condolence to Mrs. Prendergast and the family we should express our full appreciation of the interest Colonel Prendergast took in our proceedings, and of his endeavour, at all times and wherever he was, to encourage the study of architecture as one of the Fine Arts."

Colonel Prendergast served with the Royal Scots Greys in the Crimean campaign. He was present at the affair at McKenzie's Farm, and was severely wounded in the foot at the battle of Balaclava. Returning to duty before the fall of Sebastopol, he received the war medal with two clasps and the Turkish decoration. Colonel Prendergast retired from the Army in 1881. He was a J.P. for Middlesex and London, and was a member of the School Board for London for some years from 1879.

Colonel Prendergast will be deeply lamented by the Literature Committee. He rarely missed its meetings, took a keen interest in the selection of books to be purchased for the Library, and warmly supported every proposal for the extension of the Loan Library. He occasionally reviewed books in the JOURNAL, and contributed to the Transactions of the Institute a Paper on "The Cathedral of Palma Majorca," read at a General Meeting in February 1893 [published in JOURNAL R.I.B.A., 8th June 1893].

Modern Town Halls of France.

The Series of Papers on "The Modern Town Halls of France: their Planning, Decoration, and Equipment," by Mr. Fredk. R. Hiorns [A.], will be continued in the JOURNAL for the 9th February, and will conclude in the following number. The two remaining Papers deal with the Hôtel de Ville de Sens (Yonne) and the Hôtel de Ville de Tours. Some reproductions to a large scale of some interesting examples of working drawings as executed by French architects will appear with the account of the Sens building in the next number. The series began in the JOURNAL for 8th December last.

MINUTES. VI.

At the Sixth General Meeting (Ordinary) of the Session 1906-07, held Monday, 21st January 1907, at 8 p.m. — Present: Mr. Thomas E. Colcutt, President, in the Chair, 160 members, including Fellows, Associates, Hon. Associates, and Members of the Council, besides numerous visitors: the Minutes of the Meeting held 7th January [pp. 163, 164] were taken as read and signed as correct.

The Hon. Secretary announced the decease of Colonel Lenox Prendergast [H.A.], and it was resolved that a letter of sympathy and condolence be sent to Mrs. Prendergast and family, and that the letter should contain an expression of the appreciation of members for the interest Colonel Prendergast had always taken in the proceedings of the Institute, and of his endeavour at all times to encourage the study of architecture as one of the Fine Arts.

The following members attending for the first time since their election were formally admitted by the President—

viz., Robert Allsabrooke Hinds, William Cooper, Arthur Rutherford Jemmett, *Fellow*; Sydney Searle, Wilfred Irwin Travers, Owen Hanworth Cockrill, Harry Arnold Rowbotham, Francis Henry Fitzgerald, Stanley Churchill Ramsey, William Wellesley James Calthrop, Ewart G. Walker, John Parlett, *Associates*.

Papers on MARBLES: THEIR ANCIENT AND MODERN APPLICATION were read and illustrated by Sir L. Alma-Tadema, O.M., R.A. [H.F.], and Mr. William Brindley; and upon the motion of Mr. J. J. Burnet [F.], A.R.S.A., seconded by Mr. Hugh Stannus [F.], A.R.C.A., a vote of thanks was passed to the authors by acclamation and briefly responded to.

The Secretary having read the Deed of Award of Prizes and Studentships 1907 made by the Council under the Common Seal [*ante*, p. 200], the sealed envelopes bearing the mottoes of successful competitors were opened and the names disclosed.

The proceedings were brought to a close at 10 p.m.

REVIEWS.

MODERN SCHOOL BUILDINGS.

Modern School Buildings, Elementary and Secondary. A Treatise on the Planning, Arrangement, and Fitting of Day and Boarding Schools. By Felix Clay, B.A., Architect. Second Edition, Revised and Enlarged. With 450 illustrations, comprising Plans of 95 Schools, &c. 1a. 8s. [B. T. Batsford, 94 High Holborn.]

Some apology is due for this delayed notice of Mr. Clay's second edition of his admirable volume on School Buildings, which calls for more than the passing acknowledgment of a few lines. That the call has come within about five years alone be-speaks its recognised value as a text-book, and the accomplishment of a want. The intervening period of time has been spent in revision, and much new matter has been added, especially in regard to elementary education, which was purposely somewhat lightly treated in the first edition. Besides this, the first part, dealing with secondary education, has been fully entered into with commendable clearness in regard to the organisation of the teaching, and the housing of the scholars. It is pleasant to call attention to the valuable comparative treatments exhibited in the form of small plans of schools in other countries. These most interesting pages elucidate the fact that we are alone in our adoption of the central-hall plan. Country schools receive at Mr. Clay's hands full consideration, and the architect will find much useful and authoritative information to guide him in the technicalities of planning these buildings.

Many excellent plans of recent senior schools are also shown, which demonstrate more than ever that school design is becoming a highly specialised branch of the profession. Particular attention should be called to the very admirable planning and pleasant treatment by Mr. Leonard Stokes in his Lincoln Grammar School, and also to Mr. Arnold Mitchell's great public school attached to University College now in course of erection at Hampstead, both these works being marked by admirable thought combined with strong characteristic treatment.

We are impressed by this engrossing and inexhaustible subject both in interest and matter, and enclosed in a too heavy volume, which is truly hard to bear with by its material bulk as a textbook. We have little doubt but that a third edition will be called for, and this we trust will appear in two-volume form, which will aid classification.

Mr. Clay has had, no doubt, difficulty in dealing with the great mass of material to hand, which leads us to miss any mention of an important large one-story school planned upon the corridor *motif*. This is a commendable type when one is freed from the central-hall method of obtaining supervision and access to the class-rooms, and calls for fuller consideration.

We cannot close an inadequate notice of this valuable work without calling attention to the chapter on Infant Schools. An example of a French "école maternelle," given on page 327, is of much interest, and is most suggestive, notwithstanding obvious defects which we in this country would expect to find. The plan contains principles which in these progressive days may be far-reaching in the evolution of infant school planning.

Mr. Clay is a master in the critical research of his subject, and this perhaps has unconsciously led him to be influenced, somewhat more than one would expect in an architect's treatise, by novelties to be found in foreign countries.

Having said thus much the reader may be invited to inspect for himself, if he has not already done so, what may be considered as a model of a goodly and well-ordered array of accumulated facts on school planning not to be found elsewhere.

WILLIAM A. PITE.

ARCHITECTS' BENEVOLENT SOCIETY.

The following contributions have been received or promised in response to the President Mr. J. E. Colleutt's appeal issued last November. The list is still open, and further subscriptions or donations will be gratefully received and acknowledged by the Hon. Treasurer (Mr. W. Hilton Nash).

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* Denotes contributions in addition to donations formerly given as subscriptions for the current year.

ALLIED SOCIETIES.

THE NORTHERN ASSOCIATION.

Mr. J. T. Cackett's Presidential Address.

The members of the Council are aware of the feelings with which, after much pressure, I undertook the duties of President for one year. I knew that any efforts of mine must fall short of the ideal of the N.A.A., and that there were others more entitled to the honour and more capable of upholding the prestige of the office. My conviction was overcome by the persuasion and kindness of our Hon. Secretary and several past Presidents who promised to assist me. For your kind toleration accept my thanks, and let me say how much I am indebted to the gentlemen I have referred to, who have so fully kept their promises as to have justified you in electing me for a second term. This honour I highly appreciate, and for the unanimous consideration and goodwill I have experienced during my Presidency I am very grateful.

ARCHITECTS' BENEVOLENT SOCIETY.

In my Address last year I drew your attention to the appeal of the President of the Royal Institute on behalf of the Architects' Benevolent Society. This year our President, Mr. Colleutt, has felt it his duty to issue a circular letter in which he states the astounding fact that out of 6,000 architects practising in this country only 447 subscribe to this Society. I hope this proportion does not apply to our northern province. We all, no doubt, have many charitable calls, but with the knowledge that the funds of the Society are, after full inquiry, applied only to deserving cases of distress amongst members of our own profession, surely no charity has a greater claim upon us than that of helping our poorer brethren who through circumstances of unavoidable misfortune are reduced to poverty and distress. I believe that the amount paid by the Society in grants to recipients in our province exceeds the subscriptions derived from the district. This is not as it should be. It is our duty to help our brethren less fortunate than ourselves, and there is no better way than through the Society. This year our past President, Mr. Glover, is its Vice-President. May I therefore appeal to all local practitioners to subscribe regularly to the charity which he has so much at heart, and to which he has so handsomely contributed?

THE ASSOCIATION.

It is my pleasing duty to again draw your attention to the continued growth of our Association. We are now commencing the latter half of the 48th Session. In March last, the end of our year, our membership was 233; to-day we have 81 Members, 81 Associates, and 84 Students,

making a total of 246; and before the end of our Session this will be further increased.

It will not, I think, be out of place to here consider matters to the advantage of our profession. Our duties and responsibilities to the public as an Association are becoming greater, and it behoves us to consider how we can best meet them. We have now suitable premises for our present requirements, but are we making the best use of them? For the consideration of this let us divide our Members into two classes: 1st, Members and Associates in practice; and 2nd, Associates not in practice and Students. Lectures are delivered and exhibits shown at the rooms during the winter Session, but otherwise, save for occasional Council meetings, I fear the rooms are little used by the first class referred to. In my last Address I indicated subjects of local interest upon which papers should be read and discussed. The conclusions arrived at would probably be of great assistance to our municipal authorities in the consideration of schemes which deeply interest us as architects. Such opinions would make the Northern Architectural Association known to the public, and lead to its being some power by disinterestedly advocating what, in the judgment of its leading and most experienced men, is the best for the proper development of our cities and towns.

There have recently been several such matters before our local Council, and one in particular (as to which I shall have more to say later) might well have been assisted had the Association taken the matter up. I fear there is much apathy amongst us; but until the Association considers such matters, and proves that its opinion is worthy of respect, we can never hope to be asked for it. At present the Annual Address of the President, if he treats of local matters, is the only record the Association has of local changes; and, looking through the Addresses since that of our first President, those which refer to such matters are now, in the light of present progress, the most interesting reading. It is the duty of the Association, through its practising Members and Associates, to consider and express itself upon those public proposals in which as architects we are interested. I urge this suggestion for the advantage of the city as well as of our Association, and in the hope that our meeting-rooms may become the centre of many animated discussions, resulting in valued and respected opinions.

Regarding the second class of our Members, it is most gratifying to learn from our Hon. Librarian, Mr. Charlewood, that much more use is being made by them of our excellent library; and here let me congratulate the Association on the promise by Mr. J. Lamb to present a very valuable series of architectural works. The advantages of such a library to our students cannot be over-estimated, and it only remains with the students themselves to make the best use of it.

The report of the Students' Classes Club last Session was most satisfactory, and a perusal of the syllabus of lectures for this Session must make many of the older men compare the opportunities they had when young, and draw a very favourable conclusion as to latter-day advantages.

The marked improvement during recent years in the work of the Sketching Club and in students' competition work indicates, I think, greater keenness and earnestness amongst our younger men to excel; and I believe this is largely due to their now being able to meet in our rooms and compare work and discuss difficulties. That this should be so augurs well for the future of our profession locally. But I must draw your attention to the fact that we have about 80 students—a very large proportion of whom are in local offices—and yet the membership of the Sketching Club only numbers 22, and the Classes Club 29, which latter number probably includes the former. It is clear, therefore, that there are still a great many students who are not taking advantage of their opportunities, do not appreciate the work and study required to fit them for the profession, and therefore will never rise to be a credit to it. I would urge these youths to consider this. They have opportunities in Newcastle with the Association and College, which with energy and a desire to learn and excel on their part will well qualify them for the Institute Examinations and their professional career. In this connection permit me to commend to our seniors the remarks of Mr. R. S. Balfour in his Presidential Address to the Architectural Association. He remarks that "it lies with us to see that we only admit to our schools men who will be well calculated to uphold the dignity of the art of architecture," and comments upon the poor standard of general education of many who present themselves for the Preliminary Examination. It is clearly our duty to discourage youths from entering the profession unless we are satisfied they have a fair general education, are of a certain social status, and show natural gifts to justify our articling them; otherwise we may be wrecking a career which might be successful in a more congenial profession or business.

Referring to the measured drawings submitted by the students of the Association in competition, I should like to make another suggestion. Many of the prize-winners in recent years have submitted work of the highest quality—accurate and artistic drawings of the work portrayed. There is much local work of great interest that has been carefully measured and drawn by our students. If such drawings were reproduced in folio form from time to time by the Association, it would be a great incentive to the student, and the drawings would be valuable as a record of the best work of the district.

Before leaving the subject of the Association and our meeting-rooms, I desire to lay a few facts

before you as to our Permanent Premises Fund, in the hope that those who have not subscribed or have only given a small contribution may now assist or further help us. We have had great difficulty in obtaining the sum necessary to meet the required alterations to the premises and the so-called furnishing. Having practically been presented with our home, through the munificence of Mr. Glover, I think it does not at all reflect to the credit of our Members that we have not been able to raise the money required for the alterations, decoration, and furnishing of the premises. In addition to meeting these expenses, we should aim at having a substantial balance to the credit of this fund, for outlay on repairs and additions will have to be met from time to time.

Our bookcases will quickly require extension, an optical lantern should be purchased,* and there is much to do before we can say that the rooms are adequately or appropriately furnished.

The total subscriptions received amount to £271 6s. 6d., and I have analysed the same. Taking the membership collectively and excluding Mr. Glover, 25 Members have contributed, in sums of £5 and upwards, a total of £214 15s., proving that 220 Members, Associates, and Students gave the balance of £56 11s. 6d.—an average of about 5s. each. Comment upon this is superfluous.

Let me appeal for assistance to those who have not yet subscribed, and to those who can afford to increase their subscription, and so share the comparatively small responsibility of making our premises the useful and artistic home of the architects in the northern province.

THE ARCHITECTURAL CONGRESS.

The most important event of the year was the Seventh International Congress of Architects held in London in July last, at which this Association was officially represented.

It was a most successful gathering of representative architects from the world over, and ten of our brethren from the northern province attended. Full abstracts of the papers have been published, and I recommend for your consideration many papers on subjects in which we are much interested. Not the least interesting of the attractions was the exhibition at the Grafton Galleries, which included valuable original drawings of the seventeenth and eighteenth centuries, and a fine collection of measured drawings, photographs, and sketches of Mediæval and Renaissance work, classified in order of date. Contemporary work was illustrated by photographs, and there were a few choice pieces of furniture, &c.

The programme of papers, visits, and receptions was most enthusiastically carried through, and the proceedings concluded with a banquet, the good fellowship between all indicating the friendships

* Since the delivery of this Address Messrs. Wm. & T. R. Milburn, F.F.R.I.B.A., of Sunderland, have presented a lantern and all accessories.

made by the workers of all nations in a common cause. The Council of the Institute, who were responsible for the arrangements, and especially the late President and Mr. Locke the indefatigable Secretary, deserve all the credit and thanks which the members desired to convey them.

LOCAL MATTERS.

So far as our profession locally is concerned, I do not think for many years past have there been so few changes in the streets of our city. Since the completion of "Milburn House" and one or two blocks of offices in our leading thoroughfares, there is little progress to record so far as street architecture is concerned. After many vicissitudes at the hands of several of our Members, the Central Exchange block has undergone a drastic remodelling internally; but, taking the profession generally, I think all will agree that we are passing through a period of depression. There are, however, indications, I think, that we are emerging from this, and may soon return to the state of activity we so much desire. Two important rebuildings in Mosley Street are about to be commenced, and other considerable building schemes are on the *taipis*.

If street architecture has not shown much activity, however, we have to record the completion of the New Grammar School, the new wing to the College of Medicine, and two works of the very first importance to the city, viz. the Royal Infirmary and the Armstrong College, which were opened by His Majesty the King in July. Newcastle on this occasion was made a royal city, and the Northern Architectural Association will heartily congratulate our first Lord Mayor, Sir Joseph Baxter Ellis, on receiving the honour of knighthood. Sir Joseph, during his preceding year of office, received and entertained our guests the Council and Members of the R.I.B.A. at a conversazione on their arrival in Newcastle, and this reception was the key to the success of the visit.

Although not perhaps concerning us directly, we must all be interested in the progress that is being made with the construction of the reinforced concrete culvert to carry the Ouseburn, over which the valley will be levelled up. About 3,000,000 cubic yards of material will be required for this; but I suppose many years will elapse before we are interested as architects in the development of the new streets on the surface. The scheme will, however, blot out an insanitary area, and in time provide a very valuable space for city extension.

Another example of reinforced concrete building is the immense and recently opened Goods Station of the N.E.R. in New Bridge Street. There can be little doubt that there is a great future for the use of reinforced concrete, although this class of construction is still little beyond the experimental stage, and time only can prove its capabilities.

I hear with regret that the Armstrong Bridge over Jesmond Dene is in a bad state of repair. At an early date, however, it would have had to be

widened for the trams, and probably its condition will hasten the consideration of the matter by the Council, and result in a new and wider bridge to meet the traffic demands of the future. This should prove a great opportunity for our City Engineer, for its position over the sylvan valley demands an artistic structure. The result will make or mar the charms of this portion of a park of which the city is justly proud.

I should like to refer to a matter recently considered by the Council, viz., the widening and improving of the levels of the Two Ball Lonnens. It is proposed simply to widen this to 50 feet, but there is the opportunity for making it 60 feet wide and improving the gradients upon favourable terms. I hope, as this will become an important main road, that the chance may not be allowed to slip.

THE MUNICIPAL ARCHITECT.

I believe I am expected to say a few words upon the action of our local Council in employing an architectural staff to do, amongst other work, all the more important buildings of the class which in the past have been designed by and carried out under the superintendence of private practitioners, either by way of selection or competition.

When a change of practice like this is made there is naturally an outcry. We see works of considerable magnitude being carried out by a city official, and naturally resent the loss of this opportunity of securing work. Unless, therefore, we are satisfied that this innovation will effect a reduction in the rates—in other words, will reduce the cost of the architectural work of the city, or that better value is obtained by securing more satisfactorily designed and executed buildings—I think all ratepayers must agree that architects have reasonable ground for complaint. Assuming that such buildings are equally well designed, and it can be proved that by the employment of a corporation architectural staff there is economy compared with the employment of practising architects, as ratepayers we logically can offer little objection; but is this assumption reasonable? It cannot be contended for a moment, with the vast amount of work which the city property surveyor and architect has to attend to, that important buildings can have the thought and care necessary to secure the best design. I doubt if any councillor, or even the City Architect himself, will dispute this assertion.

His first duties consist of the management of the extensive corporation estates and properties, work in itself enough for one department. He has to negotiate the purchase of land and property for all street and other improvements, which in the past has taken and in the future will take up a great deal of his time. He has to design all the minor rebuildings and alterations to corporation property, and supervise both a large architectural staff, and a considerable staff of men, when the actual execution of the work is not let out by contract. A

large proportion of his time is taken up by attendance on committees and on interviews with members of the Council, besides the usual time spent on interviews in connection with the actual work. In addition to all this, he has to produce designs for buildings of the greatest variety and importance, including baths and washhouses, police stations, fever hospitals, artisans' dwellings, free libraries, asylum additions, slaughter-houses, and municipal offices. I submit it is impossible for him under these circumstances to produce such economically, artistically, or satisfactorily designed buildings as would equal in merit the work of outside architects, who possibly are specialising in several of the classes of work referred to.

In addition to the long list of buildings I have named, there is rumour that the City Education Committee are pressing for all their schools to be designed in the Municipal Architect's office, and all quantities to be prepared by him also. On this matter I hope registration may improve our position, for the proposed Bill (which I refer to later), amongst other matters, provides that municipalities and other public bodies shall on the erection or alteration of buildings in cities employ a professional member of the Institute. It also provides for legalising the scale of charges.

That the Council under the old system of giving work out, either by competition or selection, to local architects were satisfied with the results seems a reasonable argument for the continuance of the old system. If my contention is right, I think we should continue to protest until this new practice is abandoned, so that the city may have the opportunity of obtaining the best work, the best plan, and most appropriate design, upon the payment of the legal fees for them, which in the end would prove the most economical.

REGISTRATION.

After many years of strife I hope that during the coming year all reputable members of our profession may be able to congratulate themselves that the difficult subject of Registration has been satisfactorily disposed of. I trust that the Institute Council will soon be in a position to submit a scheme which will meet with the approval of country practitioners, the majority of whom, as in this Association, have long advocated some form of registration.

I attended a meeting of the Registration Committee on the 20th March last, when a report with appendix prepared by the Sub-Committee was unanimously approved. This was published as a Supplement to the JOURNAL R.I.B.A. on the 24th March last. In the time at my disposal I cannot deal with the recommendations in detail; but they propose that the Institute Charter be revised, and that a Bill be submitted to Parliament, the intention being that these two matters should not be separated. This report was considered at a special meeting of the Institute on the 3rd April, and

resolutions adopting the same and desiring the Council to consider the details and report in due course to the General Body were unanimously passed. To my mind these two resolutions are a little ambiguous, in so far as it is not clear whether the Council are requested to submit the draft amended Charter and the draft Bill together, or, on the other hand, first deal with the Charter and afterwards the Bill.

It may be quite convenient for the Committee to submit its draft for the revision of Charter and By-laws to the Council before approaching the details of the proposed Bill, but I hope the matter will not be laid before the general body of members in this piecemeal fashion.

The large body of provincial architects are anxious to see the complete proposals of the Institute, and I hope it may be the intention to submit them. This was clearly what the Chairman of the meeting of the 3rd April had in his mind, for he said: "A complete scheme dealing with the Charter and draft Bill would be drawn up and submitted to the General Body."

It is gratifying to read in the President's Address, delivered on the 5th November, that the Committee dealing with the matter had made such progress that the draft scheme—so far as the Charter and By-laws are concerned—is now under the consideration of the Council; and, further, that it is anticipated the revision will improve the position of the practising architect. This, however, is what I fear may happen: the Charter may be revised, and when that is done the subject of the Bill may be hung up until by pressure the Council are again compelled to deal with the matter. Whilst I think I should bring this matter before you, I hope my construction of the last resolutions and the President's remarks may be erroneous.

In connection with this subject may I mention the pleasure with which we are looking forward to another visit from our friends Messrs. Cross and Hubbard? They have promised on the 30th January to read a paper and open a discussion on "The Revision of the Charter of the R.I.B.A." Their assistance will be of great advantage to us in mastering the details, which no doubt are complex; but you will notice the title of the paper contains no reference to the proposed Bill which is necessary to complete the proposals of the Registration Committee.

MARKET STREET EXTENSION.

You will remember—what I must call—the *original* Market Street Extension Scheme was the subject of a considerable portion of my Address last year. Parliamentary powers were obtained in 1899, and the work proceeded until last November without a word of adverse comment. £183,000 had been expended, the necessary property had been pulled down, and nothing remained to be done but the construction of the main road and

the outlets alongside of same from Erick Street, apart from the work of the future—viz., dealing with the surplus land. Such, therefore, was the position when I last addressed you that it seemed beyond hope for any criticism to lead to a reconsideration of the scheme. Its defects, however, appeared so serious that, regardless of precedent, I determined to take the opportunity my Address offered to draw attention to the subject.

I have been blamed for my remarks—some could not believe an error of judgment had been committed, others thought my criticism captious and even unjustifiable—but much has happened since then. The end has justified the means, for, as you are aware, the scheme has been abandoned, and it is my pleasure this year to explain its successor, which our City Council has approved of, and decided to submit for parliamentary sanction next Session.

The city is to be congratulated upon its escape from a scheme which was not only disastrous in itself, but worse, in so far as it would for all time have prevented the future development of the neighbourhood. The Committee deserve thanks for the promptitude with which they sought the advice of the City Engineer, Mr. Kirkpatrick (who had then just taken up his duties), and, acting on his opinion, progress was stayed; and, further, for the infinite pains they have since taken to arrive at the best scheme.

We all know how easy it is to criticise and how difficult to construct. It was only after full consideration of almost every possible method of dealing with the problem that the Council recently decided upon the plan before you, so far as it deals with the area between Worswick Street and New Bridge Street, where the street lines are indicated by solid margins.

Before referring further to this scheme it will be convenient to introduce the plan, which you will observe deals with the area to the east of Pilgrim Street and Northumberland Street from City Road to Barras Bridge. By the kindness of the City Engineer and with the permission of the Chairman of the Town Improvement and Streets Committee I am enabled to submit Mr. Kirkpatrick's suggestions for new thoroughfares. Those north of New Bridge Street and south of Worswick Street, indicated by dotted margins, are merely suggestions for the future to mature.

Quoting from my last Address, I said: "It certainly must be wise to look ahead and formulate a scheme, and let every improvement and alteration to property on the line of it be in accord with it; so that money is saved in the end when the improvement as planned is an accomplished fact." It is in this spirit that I propose to explain the *raison d'être* for the disposition of the streets forming the Market Street improvement which the city authorities now have in hand.

The line of Market Street extension remains the same as in the original scheme, but in place of

four different gradients it will have one continuous fall from Pilgrim Street to Trafalgar Street.

For purposes of comparison I again show you plan "B" (which accompanied my Address last year) illustrating the original scheme. You will note the valuable building frontages obtained by the new plan as compared with the original proposal. New Carliol Street follows the line of my suggestion last year. That appears the best—for it is a convenient distance from Pilgrim Street—to permit of the development of the intervening area from these two thoroughfares, and it is in line with a suggested and desirable road (absorbing the existing Princess Street) and leading from New Bridge Street northwards to Northumberland Road.

The south end of Carliol Street is an important variation to my suggestion of last year, and in this respect I desire to congratulate our City Engineer, for it is to his credit that he has looked beyond the immediate area with which the Corporation were dealing. He has designed the south end of Carliol Street, so that it not only provides for all present requirements, but lends itself to possible future extension southwards, as the plan shows. For the present a road for foot traffic is provided to the south end of Carliol Street, from the north-west corner of Carliol Square, which is all that is necessary, since Worswick Street and Carliol Square North lead directly to roads running northwards which are ample for cart traffic.

Concerning Croft Street, the City Engineer submitted to his Committee the two positions indicated on plan by solid and dotted margins, with a strong opinion in favour of the latter; but the former met with approval. No doubt the existing Higham Place and the curved opening at the north end which the Council decided upon in September 1904, and which you will remember I criticised last year, weighed with the Committee in selecting the line shown by solid margins.

It is to be hoped that this important detail may receive further consideration. By providing ample margin for deviation, it will be possible, until the work is well advanced, to still follow the Engineer's advice, and make the street on the dotted lines recommended.

I regret it was not deemed necessary to make New Market Street wider. The Committee, I believe, did not think this desirable, on the ground that it is impossible to widen the older part of the road of which this is an extension. I do not agree that this is a sound reason, however, if only on account of the modern tendency to go higher with our commercial buildings. With this qualification, and subject to my former remarks, I think the scheme the best that can be made for the area, and I hope it will receive your favourable comment. If the Corporation exercise a control over the new façades, there can be no doubt that this will prove the most beneficial and artistic improvement to the city since the days of Grainger.

I hope, though, that city improvements in this

neighbourhood will not stop here. There is much to be said in favour of an improvement scheme in the future on the lines of that indicated by Mr. Kirkpatrick for dealing with the district to the south of Worswick Street.

Surely many more years cannot pass without a new High Level Bridge becoming a reality.

Mr. Moncrieff first reported to the New Tyne Bridge Committee of the Newcastle Corporation so long ago as June 1893, and since then has reported from time to time. In June 1898 the scheme was enlarged after consultation with Messrs. Laws and Bower, the engineers for Newcastle and Gateshead respectively, and fresh estimates were prepared and submitted to this Committee. These were made the basis of a report presented to the Council and adopted on 2nd September 1899. Since then the matter has been in abeyance until Mr. Kirkpatrick was recently instructed by the Committee to consider the question of site, and he reported that that indicated upon the plan is the only practicable one. It is that proposed by Mr. Moncrieff (and shown by me on plans last year) leading directly to the foot of Pilgrim Street.

While this is a work of considerable magnitude, its importance to the city can hardly be over-estimated. The immediate result would be that Pilgrim Street would regain its ancient position as the highway through the city. The slum property at its lower end would be replaced by modern business premises, and the adjoining area from City Road northward would become a commercial district of importance, if its development on some such lines as those indicated on the plan were in due time undertaken. City Road has suffered because it has no continuous building frontages on each side. So far as its west end is concerned, the suggestion would remedy this; for you will observe Manor Street would be abandoned, and its area would become a building site. The fine wide road starting from the position of the Arcade, leading with a regular gradient over the site of the Gaol to Croft Street, and passing near to the new local passenger station, would become a most useful thoroughfare; and it follows that the area on each side would be advantageously developed. Bearing in mind the present levels, it is difficult to see how this area can be as well dealt with without this suggested road.

The great depth of property between Pilgrim Street and Carliol Square West has proved an obstacle to its development, and this again would be remedied by the continuation of Carliol Street southwards. The whole area now under consideration lies in a basin which necessitates steep inclines, thus increasing cost of carriage and reducing the value of the land. This also would be remedied, as it is proposed to level this up, as was the means adopted in the making of Grey Street and other thoroughfares in this city.

We have long heard of proposals for the removal of the Gaol. The North Eastern Railway sidings

shown on the plan are about to be abandoned, and the new railway station will undoubtedly bring the neighbourhood into prominence. These factors favour some such scheme of reconstruction; and although it may be in the far future, still such suggestions should be kept in view, and, as changes come, very favourable opportunities may arise for seriously taking the work up.

My observations as to the future of this portion of the scheme, however, do not apply to the proposals north of New Bridge Street. These are practically what I suggested last year, and therefore are fresh in your memory, and, for the most part, are ripe for dealing with, and have the recommendation of being able to be carried through at comparatively small expense.

I desire, however, to again refer to the Corporation plan for opening out Higham Place. If this road is kept in its present position and opened through to Ellison Place, it will soon become an important thoroughfare with the traffic from the Shieldfield district alone, but much more so if College Street is carried through as proposed, with a branch leading from the neighbourhood of Jesmond Station, as our City Engineer has suggested. It must sooner or later, therefore, be widened, and the money spent on the proposed curve at the north end will be wasted, and property will have to be then purchased at its increased value due to the thoroughfare. Surely it is wiser to look forward, and make an alteration that will meet the demands of the future.

Beyond this, however, I desire to urge the consideration of the Engineer's plan for moving the road to the east. If it is simply widened in its present position a very narrow strip will be left, insufficient for profitable rebuilding, and the widening will be outlay without any possibility of recoupment. If the road is moved, however, as suggested by dotted lines, a continuous fine thoroughfare forming a better approach by Croft Street to the city will be the first gain; an open space will be provided in front of the Laing Gallery; and the garden behind the late Miss Dobson's house, which has now a back street on each side of it, with no outlet to that on the west, will be absorbed, and become valuable building ground with a frontage to the new road, and thus help to recoup the city for the improvement.

The brevity of my remarks is not at all commensurate with the importance of the subject; but, having regard to all I said last year, and feeling that, now it is being approached on the right lines, it seems unnecessary to take up your time with other details which are self-evident from examination of the plan.

I desire, however, to say a few words upon the financial aspect of the improvement. A man may replan and rebuild his premises with the knowledge that they will not thereby be improved in value by the total amount of the outlay, but he considers the convenience gained for his business is

well worth the expense. Similarly, city alteration schemes are justified, though they offer no recoupment beyond the increased facilities the citizens derive therefrom.

It is not, on the other hand, an uncommon experience for a man to purchase a block of old property at its full value, and with an expenditure of thought and capital he transforms it, and then realises for it far more than the money expended. It is in this latter category that I firmly believe the Market Street improvement when complete will be found.

It is impossible even now to estimate what Newcastle has gained by Grainger's far-sighted reconstruction of seventy years ago. Much less could he and his advisers then realise the ultimate financial success of his work. So I believe it is beyond us to estimate the advantage this scheme will in time be to the city. Several of our City Councillors do not approve of considering posterity, although it is analogous to the future of our city. With them any scheme is not worth consideration if it involves an outlay of money; otherwise it is difficult to understand the action of the minority in opposing this scheme.

The success of the scheme financially depends naturally upon the manner in which the Corporation deal with the property vested in them. Skill and judgment must be exercised throughout. The placing at one time of a large area of land on the market will naturally reduce prices, and as great portions of the old property as possible must therefore be retained to yield some income pending sales. The operations must extend over many years, and sales must not be forced. If care be exercised to secure the sale of the more important sites for large business premises, it would improve the demand for and price of the adjoining sites; but it cannot be expected that the prices which will be obtained will compare with those given for sites in older thoroughfares which have on either side firmly established business premises.

When I submitted my reconstruction scheme last year, I had prepared a very careful estimate for the purchase of the land, and, as I believe, a low estimate for the realisation of the available area. Without allowing for interest on the capital between the dates of purchase and realisation, I found a large balance in favour of the operation—more than sufficient to cover the interest of many years. There is not a great difference between my scheme of last year and that now approved by the Corporation, so far as the saleable areas are concerned, and I have since had the opportunity of comparing my estimate with that prepared on behalf of the Corporation. Comparing the two on the same basis, the difference is indeed trifling. Much, of course, depends upon the speed with which the realisation takes place. On the financial aspect, therefore, I submit the scheme is justified; but, in conjunction with its many public benefits, its desirability cannot be doubted.

